FEEDSTUFFS

The Weekly Newspaper for the Feed Industry

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FEEDSTUFFS *Features This Week*

EXPANDED SERVICE—A new feed mill in Missouri lets owners offer new services to customers. **Page 26.**

THIN EGG SHELLS—A scientist discusses the causes and problems of thin egg shells and vitamin C research. **Page 30.**

GRAIN BANKS—Elevators and feed mills are the logical agencies to handle this grain storing service in the future. **Page 38.**

NEW MILL—Modern push-button feed plant provides production efficiency, plus quality and contamination-free operation. **Page 46.**

INTEGRATION AND CREDIT—The development of integration brings credit managers in contact with management functions. **Page 54.**

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Drug Controls Discussed

Questions on Local Mixing Raised

WASHINGTON—It appears that further study and clarification will be needed on the question of the extent of federal controls on local mill or farm mixing where concentrates or premixes containing drugs are involved.

This was indicated following the recent meeting here between Food and Drug Administration officials and an industry committee composed of representatives of the American Feed

(Turn to QUESTIONS, page 8)

Industry Concern May Be Premature

By JOHN CIPPERLY
Feedstuffs Washington Correspondent

WASHINGTON — There has been industry concern that ideas expressed here last week by a Food and Drug Administration official pose a substantial threat to feed industry operations at the local mixing level. However, this concern may be premature.

Following the joint and informal session Nov. 18 between FDA and industry representatives, this subject was pursued by this reporter with FDA Commissioner George Larrick, who returned to his office this week but had not yet had time to examine the record of the meeting a week ago.

(Turn to INDUSTRY, page 8)

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More Egg Integration Predicted in Financing Talk at N. C. Event

By Special Correspondent

RALEIGH, N.C. — Regardless of feelings toward integrated arrangements, this form of business organization will increase in egg production, Fred A. Mangum, Jr., extension farm management specialist at North Carolina State College, told poultrymen attending an egg industry conference here.

Mr. Mangum's comments on integration were part of a talk entitled "Financing Egg Producers." He described the forms of credit most commonly used today and then went on to discuss what he called newer concepts in agricultural financing, including integrated arrangements.

Another form of credit for financing modern agriculture, he said, is one currently in common use in commerce and manufacturing. This type —which Mr. Mangum believes "holds the most promise for providing a workable solution"—is an open line of credit, using real estate as collateral security.

In his talk, Mr. Mangum pointed

(Turn to INTEGRATION, page 7)

Iowa Convention Indicates . . .

Government May Ask Trade To Build More Storage Space

By GEORGE L. GATES
Editor of Feedstuffs

DES MOINES—Grain warehousemen very likely will face requests from government officials to build additional storage space next year to handle an additional buildup in the nation's grain surplus.

This conclusion was apparent from reports given by U.S. Department of Agriculture officials who participated in a panel discussion at the Western Grain and Feed Association of Iowa convention Nov. 22.

The need for more storage will over-ride even such significant developments, problems and influences as these:

- A change in administration and the composition of Congress after next Jan. 21.
- Possibilities of some drastic changes in farm legislation.
- Strong resentment of the grain trade over the big cut in storage rates under the Uniform Grain Storage Agreement which went into effect this year.
- Some difficulty in making accurate estimates of storage needs this far in advance of next year's loan takeover.

Presenting the government's "case"

(Turn to IOWA, page 100)

Calves Show Good Gain, Efficiency on Roughage-Free Diet

UNIVERSITY PARK, PA.—Some persons have predicted that cattle one day will be fed like non-ruminants. Studies have been or are being made to determine whether roughage is essential in ruminant diets. And in commercial practice, high-concentrate rations for beef cattle feeding are finding increased use.

Now comes a report on a preliminary test of a roughage-free, low-fiber diet for cattle. It was a diet which included milk replacer, pig starter pellets, corn and pig grower pellets.

"Due to the relatively high rate of

(Turn to CALVES, page 8)

Problems Seen in 'Living with' FDA Feed Regulations

DES MOINES — "I left with a much better understanding of what the Food and Drug Administration is going to expect of us, but I am badly confused on how we are going to live with their regulations."

This is how Charles S. Force, president of the Grain & Feed Dealers National Assn., summed up his reactions to the meeting between industry and

(Turn to PROBLEMS, page 100)

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Delaney Clause Pros, Cons Debated

By MARTIN E. NEWELL
Feedstuffs Staff

KANSAS CITY—The pros and cons of the Delaney clause of the Food Additive Amendment were debated again before the Kansas City section of the American Chemical Society on Nov. 18 at the University of Kansas City. The views of medicine, administration and industry were presented by three speakers—Dr. Paul R. Cannon, chairman of the department of pathology, University of Chicago; Robert S. Roe, director of the Bureau of Biological and Physical Sci-

(Turn to DELANEY CLAUSE, page 101)

Howard McMillan of Osborne McMillan Dies

MINNEAPOLIS — Howard I. McMillan, president of the Osborne McMillan Elevator Co. and a past president of the Minneapolis Grain Exchange, died here Nov. 22.

H. I. McMillan

He was 63. Mr. McMillan had been president of the Osborne McMillan Elevator Co., of which his father was a founder, since 1937. He was elected to a one-year term as 64th president of the grain exchange in 1956.

Mr. McMillan joined Osborne McMillan in 1921 and was made treasurer in 1926. During his 23 years as president the formula feed business

(Turn to DEATH, page 101)

Energy Nutrition, Other Topics Covered at Washington Event

By DR. LEO S. JENSEN
Washington State University

MT. VERNON, WASH.—Talks on energy nutrition of poultry, soybeans and soybean products in feeds, and poultry nutritional work at the University of British Columbia highlighted the 13th annual Washington Animal Industry Conference held at Skagit Valley College in Mt. Vernon on Nov. 14-15.

Other subjects covered at the conference included pelleting of feeds for ruminants, dietary factors affecting milk composition, the problem of egg shell quality and factors influencing antibiotic usage in feeds. Eight research briefs by Washington State University staff members rounded out the nutritional program. The conference was sponsored jointly by the Washington State Feed Assn. and Washington State University.

At the evening banquet held at the

(Turn to WASHINGTON, page 97)

Quaker Oats Names Feed Sales Manager

CHICAGO—The Quaker Oats Co. has named Henry W. Crutchfield general sales manager for feed products, effective Dec. 1. Mr. Crutchfield, who succeeds the late John C. Huckabee, has been manager of the company's Southwest feed division with headquarters at Sherman, Texas, since 1955.

In his new capacity, Mr. Crutch-

(Turn to SALES MANAGER, page 8)

Virginia Feed Plant To Make Larro Feed

MINNEAPOLIS — General Mills has completed arrangements with Chester Housh of East Point Mills, Inc., for the manufacture of Larro "Farm-Tested" Sure Feeds at Shenandoah, Va., according to E. E. Woolley, vice president and general manager of the feed division. The manufacturing facility of East Point Mills, Inc., will produce Larro Feeds for distribution in the area.

"We look forward to serving the livestock and poultry industry in the Shenandoah Valley, and this new mill

(Turn to FEED PLANT, page 8)

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The regional circulation of this issue is concentrated in the northeastern states

Top of the Hopper

TURKEY PRODUCERS who have operated on an independent or feed company-financed basis are reported in some sections to be showing more interest in contract growing, with flat guarantees for their labor and facilities. One reason, it is said, is that they feel that next year will see price-depressing over-production, and they want to have a setup where they can count on a certain return on their investment and labor.

At the same time, in at least some instances, some of the contractors are reported moving into arrangements (with processors who want a certain supply) where they will know when they buy their hatching eggs just where and for how much the birds will be sold at market time.

♥ ♥

MECHANIZATION, AUTOMATION and all that sort of thing get credit for boosting farm production efficiency. However, a relatively old device is highly important, too. Howard Zindel, head of the Michigan State University poultry department, says, "The most important tool on the farm today is a sharp pencil and the ability and desire to use it." He was quoted in the Poultry Producer on the subject of the importance of record keeping. Even if facts are being fed into an electronic computor, the pencil gets a pretty good workout before and after, too, one might add.

♥ ♥

AN EXAMPLE OF A PRESSING need for better farm record-keeping was provided at a recent Twin City Nutrition Seminar at the University of Minnesota. An extension specialist, Ralph Wayne, reported that only 10% of the dairy producers in Minnesota are participating in testing programs which show which cows are producing up to profitable levels and which are not. He pointed out the sharp difference between labor income derived from the average cow in the state, $44 a year, and the DHIA participants' average return of $128 a year. The latter markets 400 lb. of butterfat, compared with the state average of 267 lb. The difference begins with record-keeping.

♥ ♥

IN THESE TIMES of extremely competitive business, when everyone is hustling in his own territory to keep things going, one hears more than the usual number of comments about the expense and time involved in the many meetings and conferences offered to the industry. At the same time, however, there probably never has been a time when feed men have been more hungry for information on methods and practices which will enable them to keep pace with changes.

In this connection, some comments on educational efforts for feed men are interesting. Maurice Johnson, a former feed industry leader who just recently entered the banking business in Kansas City, presented some thoughts on feed schools and drew comparisons with the banking industry in remarks before the Feed Production School board of trustees.

One of his views was that the production school "has more power built into it for the industry than many realize . . . The numbers of persons needing this kind of help are equal to numbers in the feed business, and the number of mills has continued to increase."

There are more feed manufacturers, large and small, than there are bankers, Mr. Johnson noted, but the banking industry has a large number of schools annually. Most of them are of two weeks' duration, are held on college campuses and are operated in true school fashion. A banking school which Mr. Johnson had attended had an enrollment of 1,150. Perhaps, he

(Turn to TOP OF THE HOPPER, page 97)

How's Business?

AN EVERY WEEK REVIEW OF FORMULA FEED BUSINESS VOLUME, INCLUDING PRICE, SUPPLY AND DEMAND TRENDS

It was obvious this week that formula feed business is doing better in the grain-deficient regions than in corn belt states. This situation points up the cause of a problem currently confronting manufacturers and dealers in the Midwest. Farmers have harvested or are reaping abundant crops of corn and other grains. If they don't have the time or money to erect more storage bins they feed corn, a low-priced item because of the abundance, in great quantities. Also, despite early-season reports that corn had been maturing nicely, some farmers are troubled with wet corn. And too many, at least in the opinion of feed men, are pushing it into their livestock rather than drying it for later use. The hog-corn ratio remains in a climbing mood. Based on Chicago prices, this week's ratio of 18.9 was 1.2 ahead of the week before and well above 11.3 mark recorded a year ago. The wholesale feedstuffs price index dropped 1.6 points this week to 70.3, compared with 8.7 a year ago. At 55.8, this week's feed-grain index was .5 under a week earlier and 7.4 points below a year ago. (Feed markets in detail on pages 98-100.)

Northwest

This is a short week in days because of the Thanksgiving holiday—and it's been a bit short in formula feed business, too.

Unusually warm weather, lingering green pastures, plentiful supplies of new grain and some wet corn that farmers are feeding heavily instead of drying appear to be the major factors which have prevented an upward change in demand.

Feed manufacturers and dealers—and ingredient men, too—are somewhat amazed at current industry conditions. There's been a feeling for quite some time that "next week" would bring substantial improvement, but that "week" has not arrived yet. And right now it looks as though there's no telling exactly when the new feeding season will really arrive.

Feed sales are slow, but that doesn't mean business is bad. It's just that movement isn't what normally is expected for this time of year.

Southwest

Formula feed business in this area underwent further contraction this week with Thanksgiving being only partly responsible for the slower operations. The open weather prevailing throughout this territory has also been a factor in slower business. Most mills will have only a four day operation this week.

One dominant factor in the slower formula feed business has been the abundance of cheap feed grains throughout almost the entire area. Lack of storage for the near record yields of corn and milo has forced supplies on the market and low prices have caused more farm consumption to the detriment of formula feeds.

Major ingredient prices also continued down with soybean meal and millfeeds both under pressure for the nearby position.

Northeast

The firmer tone in formula feed demand continued and could result in a little upturn in running time next week. While running time wasn't increased in the latest week, one spokesman said, "We are getting ahead in orders instead of having to scrape for them."

Eggs continued to do well and prices advanced 1-2¢ doz. at the wholesale level. Growers are expanding their use of egg mashes in an effort to take advantage of the market with as many eggs as their hens can lay.

Dairy feeds, however, still leads in sales tonnage despite the push in egg mashes. Turkey feed demand is off, of course, but there still was quite a lot of birds held over for the Christmas trade.

The broiler market was neglected but demand for feed should rebound shortly for the January-February market.

The ingredient market was mostly steady during the week.

Southeast

Formula feed business in the Southeast continues to be reported as being fairly good. Feeds for laying hens are reported as being very good and egg raisers seem to be very happy over the returns they are now receiving. Cheaper feed ingredients for cheaper feeds are enabling the feed mills and broiler producers to realize a fair profit, although broilers are selling for 15¢ lb. f.o.b. the farm.

With demand better, corn is beginning to show a firmer tone. Prices are ranging from $1.12 to $1.22 bu., delivered, depending upon location.

Many feed manufacturers have replaced cottonseed meal in their formulas with the cheaper soybean meal and ranchers have been switching over to soybean meal due to the lower price. Many believe, however, that colder weather will advance soybean meal, but they cannot see any hopes of a stronger cottonseed meal market.

Cottonseed hulls continue to be in tight supply. Limited offerings in the Southeast are available at $23 ton, which is a little more than the buyers want to pay.

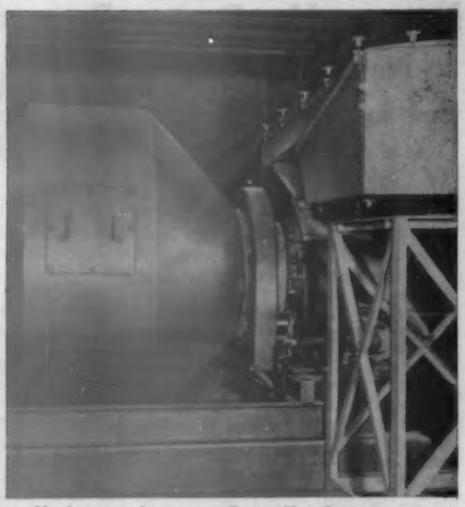
Several citrus processors are now in operation and two or three of the major producers of citrus pulp hope to be at near maximum production by the end of next week. Demand is still greater than supply of citrus pulp, and prices remain firm at $47.50, f.o.b. shipping points.

Central States

Day-to-day volume of business during this week edged up another notch or so. And while mixers are rather unanimous in saying that they could stand still additional improvement, there was some further betterment. By comparison with October volume, the latter is over-shadowed to a moderate extent, although it has to be admitted that October volume was anything but earth-shaking in size and does not make too good a measuring stick.

Mixers were slightly optimistic in that this was about the first time in a considerable while that there were two consecutive weeks of better demand. Running time is holding up well around the normal 40-hour week but there has been no appreciable increase in the backlog as current rate of operations is taking care of the daily demand in fairly good shape.

(Turn to MARKETS, page 103)



Modern equipment at Peter Hand assures proper blending of ingredients. Finished products are tested for particle size as well as potency.

Now Has Improved Vitamin A and D_3 with even greater stability. Peter Hand C-F Premix contains just the proper amount of vitamins and trace minerals to quickly bring the ruminant animal to its full profit potential on economical roughages. 1 bag fortifies 1 ton.

What's new in profit-building premixes for ruminant animals?

It's Peter Hand's new C-F Premix!

Recent research has shown us that ruminant animals can and do flourish on relatively high levels of low quality roughages if we supplement these roughages with the necessary nutritional and cellulolytic factors. These factors help establish and feed the microbial population of the rumen to aid in the digestion of cellulose, build microbial nutrients which can be used by the animal, and produce unidentified growth stimulants.

But, since all animals do not need or use the same factors, modifications of the basic formula should be made to *control* the amounts of vitamins and trace minerals that will be added to the ration. And, that's a job for *Peter Hand's new C-F Premixes.*

Here is a fortifier that takes full advantage of all the latest scientific developments. There are separate formulations for dairy cattle, beef cattle, sheep and goats, and horses. And each has been blended to the specific needs of the animals it will feed. C-F Premixes help provide them with a balanced diet to promote strong and healthy growth and quickly bring them to their *full profit potential*... even on the lower quality roughage.

PETER HAND'S *RED TAPE* SAVES YOU TIME, TROUBLE AND MONEY!

Peter Hand assays every ingredient used in every product. After samples are taken, containers are sealed with a distinctive red tape. This red tape cannot be removed until the assay verifies quality... your 100% guarantee that Peter Hand Premixes, vitamins, fortifiers and medications meet specifications that have been established.

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Nutrena Has Part In New Egg Plan Set in Wisconsin

SAUK CITY, WIS. — A "community egg program" designed to reach within three years a goal of annually producing and marketing up to 120 million extra fancy fresh eggs from some 500,000 layers was announced here this week as a joint agri-business venture by Wetzel Produce Corp., Sauk City, and Nutrena Mills, Inc., Minneapolis-based feed manufacturing company.

A. J. Wetzel, president and manager of the produce company, said the program has been developed to insure a constant egg outturn in a volume sufficient to justify a major egg marketing promotion.

Eggs will be funneled into Wetzel's marketing center here from "high density" layer houses developed by Nutrena and owned and operated independently by area farmers and poultrymen, Mr. Wetzel said.

50 Producers Anticipated

Mr. Wetzel and M. E. Rudolph, Nutrena district sales manager at Madison, said their firms initially are working with 25 area poultrymen, representing approximately half of the total program's participants. Construction of the first several layer units is expected to begin within 30 days.

"We hope in three years' time to have 500,000 laying hens in the program producing fresh, premium quality eggs at the lowest possible cost for labor and equipment," they said.

Mr. Wetzel said the venture "sets a new high in coordinated production and marketing of eggs by independent

(Turn to NUTRENA, page 8)

Date and Site Selected For '61 NFIA Meeting

DES MOINES — The executive committee of the National Feed Ingredients Assn., Des Moines, has announced that its 1961 annual convention will be held Sept. 27-29 at Lake Lawn Lodge, Delavan, Wis.

This announcement came from a meeting of the group held Nov. 22 at the Ft. Des Moines Hotel at the request of Dean Stauffacher, Diamond V Mills, Inc., Cedar Rapids, NFIA president. In addition to the selection of the date and site for the 1961 convention, the executive committee discussed other association plans for the new year and these will be presented to the board of directors Dec. 8 at the Savery Hotel in Des Moines.

K. C. Christmas Party Is Dec. 17

KANSAS CITY — Invitations for the Kansas City Feed Club's annual Christmas party went out this week, according to Richard M. Shoop, Albers Milling Co., club president.

The party will be held Dec. 17 at the Town House Hotel in Kansas City and promises to be "the biggest and best yet," according to Mr. Shoop.

The evening will start with cocktails at 6:30 p.m. followed by dinner at 7:30 and dancing will be from 9 until midnight. There will be favors for the ladies and a large number of attendance prizes.

Mr. Shoop urges those who wish to attend to send in their reservations early, as the ballroom can handle only a limited number of persons. Checks for $12 a couple should be sent to James R. Ryan, International Milling Co., North Kansas City, Mo., club treasurer.

Ingredients Quiet In Holiday Week

Demand has been only so-so and production of some items has been more than can be handled readily so the feed ingredient market as a whole in this holiday-shortened week limped along slowly.

While there was little or no change in some oilseed meals, animal protein feeds, grain high-protein feeds and alfalfa meal, soybean meal, cottonseed meal and millfeeds assumed lower positions.

From Memphis it was reported that cash soybean oil meal was being quoted at levels equal to post World War II lows.

Observers in several market places said over-all consumption of soybean meal has been good, but production beyond adequate absorbence by the feed industry has created a slump. Demand for meals for movement into export has been down, too. Until tightness of supplies develops, buyers are expected to trade only in the immediate market, so oilseed meal futures have declined.

Feeding cane molasses showed price improvement, which was said to be the result of distributor concern over the question of whether Cuban supplies would be available in 1961.

Demand for alfalfa meal has gained enough to offset a higher production level and to keep prices stable.

The American Dehydrators Assn. reports that dehy production for the first six months of this crop year is the highest yet achieved by the industry. ADA says indications point to total annual production exceeding 1,200,000 tons for the first time, but disappearance, as calculated from U.S. Department of Agriculture reports, was 800 tons ahead of the five-year average and only 1,800 tons less than last year's disappearance at the end of October.

ADA comments: "Since the shift in buying habits seems to be toward less summer buying and more in the winter months, we do not feel that the excess stocks are such a burden as they used to be."

Veterinarian to Address Vet-Nutrition Meeting

KANSAS CITY—One of the speakers of national prominence who will appear on the program of the third Midwest Veterinary Nutrition Conference Dec. 12-13 at the Continental Hotel in Kansas City will be Dr. Mark L. Morris, Allenspark, Colo., president-elect of the American Veterinary Medical Assn.

Dr. Morris is considered unique among veterinarians in that he has three specialties: practice, nutrition and research. He developed a line of dietary foods for dogs and cats used only on prescription by veterinarians. Dr. Morris also established a research laboratory in Topeka, Kansas, where more than 50 studies in swine, sheep, canine and feline health are under way.

Another accomplishment of Dr. Morris is the establishment of the Morris Animal Foundation, an organization which has assisted in the education of 29 veterinarians at 16 different schools.

Dr. Morris' topic will be "Challenges in the Medical Sciences Facing the Food Industry."

The talk by Dr. Morris is just one feature of a two-day program designed to be of interest to both feed men and veterinarians.

Turkey Testings Up; Chickens Decrease

WASHINGTON — The number of heavy breed turkeys tested for pullorum disease during October, 1960, was the largest for the month since records began in 1952, the U.S. Department of Agriculture announced.

Heavy white breeds tested totaled 196,407, compared with 97,742 in October, 1959, and the previous high of 104,499 in October, 1958.

Other heavy breed turkeys tested (mostly broad-breasted bronze) totaled 499,144, compared with 364,820 in October, 1959, and the record high of 506,277 in October, 1958. Testings of light breeds in October, 1960, totaled 36,873—up 7% from October, 1959, USDA reports show.

Showing an increase during the July-October period (1960) were testings of heavy white breeds—up 87% from this same period in 1959 and other heavy breeds were up 52%. Testings of light breed turkeys for the July-October period totaled 129,491 or a 5% increase from these same months in 1959.

On the other hand, chicken numbers for supplying broiler hatching eggs are down. USDA reports that 2,793,718 chickens were tested during October, 1960—a 3% decrease from October, 1959. The cumulative total for the period January-October was 18,704,484—down 12% from this same period in 1959.

Chickens tested in October for supplying eggs for egg-type chicks totaled 1,612,171 compared with 2,055,869 in October, 1959—a 22% decrease. During the January-October period, the number tested totaled 6,416,095 compared with 7,903,251 during these same months in 1959—a decrease of 19%, the USDA announced.

'60 Total Chick Hatch Passes '59 Period; Big Gains in October for Eggs, Broilers

WASHINGTON—This year's total chick production by commercial hatcheries, slowed down by egg-type cutbacks of as high as 38% in early months, has finally caught up with and passed 1959 output with the help of a big push to meet expanded demand that has continued since May.

The U.S. Department of Agriculture says production of both broiler-type and egg-type chicks January through October totaled 1% more than during the same months in 1959. And it's likely that this edge will grow because the number of eggs in incubators Nov. 1 indicate that the hatch of both egg-type and broiler-type chicks will be significantly larger this November than last November.

Broiler-type chick production has been running 2-6% ahead of last year, except at the end of April, when the 1959 and 1960 cumulative comparison was deadlocked. But this year's egg-type hatch still hasn't caught up with last year's, even though monthly increases since April have run as high as 65% (June).

Comparative Figures

USDA says commercial hatcheries produced 157,469,000 chicks in October, an increase of 16% from October, 1959. Of this total, 16,218,000 were egg-type—a 13% gain, and 141,251,000 were broiler-type—up 16%.

The egg-type hatch during the first 10 months of 1960 totaled 447,831,000, a decrease of 13% from the same months in 1959. Broiler output during this period came to 1,660,738,000, or 6% greater than last year.

Egg-type output so far this year is down in all regions. However, October counts were higher in all regions except the Northeast.

Broiler-type hatch expansion continues in several major regions—west north central, south Atlantic, east south central and west south central. Also gains were noted in the January through October figures for the mountain and Pacific states, but the hatch this year is running behind 1959 in the northeastern, middle Atlantic and east north central states.

Expansion May Continue

Why economists say the egg and poultry outlook for producers is less favorable than current conditions is

(Turn to CHICK HATCH, page 100)

New Dry Form of Antioxidant Marketed

ST. LOUIS — A new dry form of Santoquin brand antioxidant for poultry feeds and dehydrated forage, developed to provide handling and blending advantages for formulators, is now being marketed by Monsanto Chemical Co.'s agricultural chemicals division.

Referred to as Santoquin Mixture 6, the compound is specifically suited for feed mill mixing operations, according to Monsanto. Its dry, free-flowing form permits thorough dispersion of the material throughout feed formulations, the company states.

Ben W. Martin, manager of feed additive sales for the agricultural division, said that 6 oz. of the compound is sufficient to treat a ton of feed.

Mixture 6, which supplements liquid Santoquin in the company's line of chemical feed additives, is commercially available in 100-lb. leverpaks specially lined to retain product quality in shipping and storage. The new compound consists of 66.6% active material on a dry carrier.

Mr. Martin also said that construction is underway at the company's Nitro, W.Va., plant on a new manufacturing unit for Santoquin to accommodate growing use of the product.

Average Bulk Prices and Index of Weighted Prices*
(Dollars per ton)

	Nov. 22, 1960	Nov. 15, 1960	Change from previous week
OILSEED MEALS			
Prices at prin. mkts.:			
Soybean meal	53.10	55.05	—1.95
Cottonseed meal	56.95	57.35	— .40
Linseed meal	61.95	61.95	...
Copra cake or meal	57.50	57.50	...
Peanut meal	53.00	54.00	—1.00
Index	71.3	73.2	—1.9
ANIMAL PROTEIN FEEDS			
Prices at prin. mkts.:			
Meat meal	66.55	66.80	— .25
Tankage	66.15	66.50	— .35
Fish meal	88.50	88.50	...
Index	61.7	61.9	— .2
GRAIN HIGH-PROTEIN FEEDS			
Prices at prin. mkts.:			
Gluten feed and meal	46.45	46.45	...
Dist. dried grains	59.10	59.10	...
Brewers dried grains	50.50	49.60	+ .90
Index	76.5	76.4	+ .1
WHEAT MILLFEEDS			
Prices at prin. mkts.:			
Bran	37.10	39.15	—2.05
Midds. and shorts	38.55	40.65	—2.10
Index	68.3	72.1	—3.8
OTHER MILLFEEDS			
Prices at prin. mkts.:			
Hominy feed	39.30	40.80	—1.50
Rice bran	28.75	29.00	— .25
Index	60.5	62.6	—2.1
ALFALFA MEAL			
Prices at prin. mkts.	51.40	51.40	...
Index	98.9	98.9	...
MOLASSES, FEEDING			
Prices at prin. mkts.	25.49	24.88	+ .61
Index	75.9	74.0	+1.9
ALL FEEDSTUFFS			
Index	70.3	71.9	—1.6
FEED GRAINS			
Prices at prin. mkts.:			
Corn	33.40	34.00	— .60
Oats	42.10	41.30	+ .80
Barley	41.20	41.40	— .20
Grain sorghums	33.60	34.00	— .40
Index	55.8	56.3	— .5

*Base period of index is 1947-49.
Source: USDA

Northwest Group's Xmas Party Dec. 2

MINNEAPOLIS — The Northwest Feed Manufacturers Assn. will hold its annual Christmas party at the Calhoun Beach Hotel Dec. 2.

A 6:30 p.m. cocktail hour will open the party, followed by dinner at 7:45, entertainment and dancing until 2 a.m. with Les Barlow's orchestra. Admission is $12.50 per couple and reservations may be sent to Ivan Scanlan, 25-44th Avenue N.E., Minneapolis 21, Minn.

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Florida Group Told—

Nutritionists Need to Educate Public on Chemicals' Benefits

By ROBERT BROWN
Special Correspondent

GAINESVILLE, FLA.—Nutritionists have a task ahead of them in better educating the public as to modern day chemicals because of false impressions that have been created. Dr. F. N. Andrews of Purdue University told the nutritionists of their task in a talk given at the Florida Nutrition Conference and annual meeting of the Florida Feed Dealers Assn. here.

Topics of the conference also included minerals, chemicals, swine nutrition, pelleting and record keeping.

"The sudden awareness of the consuming public that its food supply might contain substances of a chemical nature, and the unfortunate association of chemicals and cancer, has sometimes placed the nutritionist in the position of defending his profession as one which has raised—not endangered—the standards of public health," he said.

The nutritionist must explain that man originated and evolved a chemical world and that all living things depend on 102 known chemical elements. He must enlighten the large segment of the population which thinks of nature as beautiful, pure and tolerant and which resents the advances in knowledge which led to the development of chemical fertilizers, synthetic vitamins, amino acids, hormones, antibiotics and a variety of drugs. For example hydrogen, phosphorus, sodium, potassium and magnesium are all essential for life, but they are also highly combustible and explosive in pure form. Iodine, fluorine, chlorine and copper are vital to living cells, but they are also highly toxic when used in improper amounts, he said.

"The layman has the philosophy that if nature included a substance in food, that substance is somehow useful. The nutritionist in his educational program might point out that arsenic is one of the oldest insect killers and an element that has been under close control on vegetable and fruit crops for a very long time. In organic combinations nature has dealt with arsenic safely for thousands of years," he said.

The use of pesticides on crops and in animal feedstuffs for the control of parasites has placed new responsibilities on the nutritionist, he said.

The nutritionist must re-examine the image that has been created by the public's conception of chemicals and minerals. There are "crackpots" making speeches and writing letters denouncing the use of chemicals and minerals, who also think that food must be organically produced. Little do they realize the entire picture and that science has increased production of food for public consumption at less cost, he said.

Additive Amendment

The viewpoint of the U.S. Food and Drug Administration was given by John W. Sanders, Jr., Atlanta, who pointed out the food additive amendment of 1958 becomes effective in a few months, March, 1961.

After that date, additives that have not been proved safe become adulteratives in the eyes of FDA.

The department has compiled a "white list" of substances and feed manufacturers may obtain a copy of the list known as the GRS chemical list. However, it should not be assumed a chemical not on the list is inadequate, he said. The list was prepared in an effort to be helpful to industry.

Referring to the Delaney clause, Mr. Sanders said:

"It has been characterized in a number of ways as unworkable, an unsound block to scientific research. We believe it will encourage research. Differences which exist between industry and the FDA are honest differences of opinions and in the future will be solved through research and study."

Mineral Nutrition

In many respects mineral nutrition of livestock stands today where vitamin nutrition stood in 1930. We have only scratched the surface with respect to fundamental metabolism, Dr. George K. Davis, director of nuclear activities, University of Florida, said.

Dr. Davis said, "At the present time we are very carefully re-evaluating our information with respect to the use of such old standbys as calcium, phosphorus and salt in the nutrition of livestock."

He commented that it had been reported in older literature that a phosphorus deficiency characteristically resulted in bone fragility even though chemical analysis indicated that adequate phosphorus was present in the feed.

The Florida researcher stated, "In our studies we have observed that phosphorus deficiency characteristically results in reduced growth, poor reproduction, failure to fatten and a reduction in mature size of animals, but does not result in broken bones unless a copper deficiency is concurrently present. We have not been able to put this thesis to an experimental test where we feed especially prepared diets so we are somewhat hesitant to make the unequivocal statement that a copper deficiency is necessary before the characteristic broken bones previously reported for phosphorus deficiency occur, but thus far the evidence we have accumulated points to such an interrelationship."

Dr. Davis says that it appears "it will be necessary to assure the presence of an available form of copper if we are to insure that the calcium and phosphorus so necessary for bone formation are to be used efficiently and effectively."

Reasonable Level

Dr. Davis continued, "With cattle being fed all barley diets and diets that are extremely high in concentrates, exceptional care will have to be taken to insure that the calcium-phosphorus ratio is kept within a reasonable level."

Two results in the last two years have suggested that magnesium is far more important in the nutrition of farm animals than had been anticipated and that the compounds of magnesium present in forages may be the key to the problem of magnesium deficiency tetany, Dr. Davis also pointed out.

The Florida scientist commented that one of the most interesting mineral nutrition developments in the last two years has been that of the interrelationships between trace elements and other constituents of the diet, notably the protein portions of the diet.

He said, "We had noted here in our research the rather close association between high levels of crude protein in pastures and the difficulties of animals because of apparent mineral imbalances. Dr. J. T. McCall has demonstrated that high levels of protein have a marked protective action

(Turn to FLORIDA, page 101)

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Florida Feed Men Select Officers

GAINESVILLE, FLA.—Russ Godwin, Florida Feed Mills, Jacksonville, was elected president of the Florida Feed Dealers Assn. at the annual convention held in Gainesville in connection with the Florida Nutrition Conference. He succeeds Ted Shields, Tampa.

Roger Eikenberry, General Mills, Coral Gables, was elected vice president and Jim Barnhardt, Early & Daniel, Tampa, was elected secretary. William D. C. Robinson, Security Feeds, Jacksonville, was re-elected treasurer.

Added to the board of directors were Frank Jackson, Tampa, and W. L. Jackson, Jackson Grain, Lakeland. They will serve with members of the board already serving and will replace Keith Jackson and Frazier Rogers, Tampa, who will become members of the advisory council.

At a one day business meeting the association agreed to amend its by-laws to create a Senior Advisory Council composed of all former presidents who are active members or representatives of active members. The action was taken to provide room for younger men to replace older officials, who have been prevailed upon to stay on the board so they would maintain their knowledge of association affairs. The plan is similar to action taken by the AFMA and other associations, President Ted Shields reported.

An amendment was passed which would pave the way for the commercial feed industry to nominate to the state commission of agriculture two candidates for the seat on the newly-established State Agricultural Advisory Council, an organization of men in various phases of the agricultural field to guide, inform and advise the state commissioner.

Convenient Illness

GAINESVILLE, FLA. — Finding the location of the Florida Nutrition Conference a convenient spot for a seige of appendicitis was Bob Alexander, Alexander-Smith, Inc., Tampa.

While attending lectures in the auditorium of the University of Florida hospital, he suffered an attack and was whisked into the medical center where he underwent an appendectomy.

Gray Milling Buys Phelps & Sibley Firm

CATTARAUGUS, N.Y.—The James H. Gray Milling Co., Inc., has acquired substantially all of the capital stock of Phelps & Sibley Co., in Cattaraugus, and has assumed management and operation of the company, it was announced.

According to the announcement, Phelps & Sibley Co. will continue with its separate corporate identity, and will not be merged or consolidated at this time into the James H. Gray Milling Co.

Phelps & Sibley President Walter F. Sibley has resigned as officer and director of the company. He has now retired and will be at his home in Cuba, N.Y.

The new general offices of the company are located at 18 Washington St., Cattaraugus.

The new management is formulating plans for continuing and expanding the retail business of Phelps & Sibley.

Boyle Trading Corp. Formed in Buffalo

BUFFALO — Formation of the Boyle Trading Corp., a feed brokerage with offices in the Corn Exchange Bldg. here, was announced Nov. 21 by Charles A. Boyle, who heads the new company.

Mr. Boyle said the concern will do business on a national scale. He has been in the feed-brokerage business 25 years, the past 20 years in Buffalo.

Florida May Seek Federal Aid for Crotalaria Fight

GAINESVILLE, FLA.—The federal governgent may be asked to furnish financial assistance in helping to eradicate crotalaria plants in Florida.

A committee of agriculture authorities, feed and grain men investigating the crotalaria problem in the state has revealed it will recommend to the state commissioner of agriculture that Washington be queried to see if funds might be available in the drive against the plant whose black seed is causing so much havoc in the corn business.

The committee, which revealed its findings at the Florida Nutrition Conference and the annual meeting of the Florida Feed Dealers Assn., also recommended further research on the crotalaria plant and seed since most of the information now available is at least 20 years old and deals primarily with the soil conservation assets of the plant.

There is need for further research to determine the lowest tolerance level for both poultry and livestock. The experiment station here has agreed to do this additional research.

Also suggested was further effort to control the plant chemically in the fields, as well as the seed which often lies dormant for several years.

Further training and education in the use and adjustment of harvesting equipment were advocated. It was felt that many farmers have not been fully educated as to how to set their equipment to pick up a minimum amount of the crotalaria seed. The extension service agreed to launch an educational campaign along these lines.

The department of agriculture, on an administrative level, has agreed to stipulate whether grain is adulterated or not, but it was emphasized that it will not render an opinion as to tolerance.

Financial Assistance

Decision to recommend that federal authorities be contacted regarding financial assistance was based on the theory that since the crotalaria plant was first brought into the South by the federal government and put into the fields as a depression-born cover

(Turn to CROTALARIA, page 103)

Cyanamid Research Post to John King

NEW YORK—American Cyanamid Co has announced the appointment of Dr. John A. King to the position of director of animal science research for its agricultural division. Dr. King will report to the manager of research and development, Dr. J. T. Thurston. He replaces Dr. E. L. R. Stokstad, who has been appointed a research fellow in Cyanamid's Lederle division. Prior to joining Cyanamid in October of this year, Dr. King was director of research and general manager for the research division of Armour & Co. He has had 15 years' experience in medicinal research at the Winthrop Chemical Co. and Warner-Chilcott Research Laboratories.

Dr. J. A. King

Dr. King has had 45 scientific papers published, principally in the Journal of the American Chemical Society. He is associated with 10 U.S. patents and numerous corresponding foreign patents.

He obtained his A.B. degree from the University of Indiana in 1937 and his M.S. and Ph.D. degrees from the University of Minnesota.

INTEGRATION

(Continued from page 1)

out the demand for capital on poultry farms in their race to compete in volume efficiency. Using slides to illustrate his talk, he explained that someone just getting into the business or some one adding 5,000 layers will need $25,455 before any income is obtained.

"Most of us find it hard to put that much money aside from current farm earnings," he said.

He discussed the question of whether borrowing such sums of money is a profitable undertaking. He explained three types of loans: short term farm credit, intermediate farm credit and long-term loans. The first is usually written for a period of one year or less and is usually used for purchases of chicks, feed, general operating expenses and family living expenses. Interest rates are at times much higher than could be obtained from commercial sources.

Intermediate farm credit refers to loans which are to be repaid within two to five years. Loans of this type are used for machinery, chicks, buildings and equipment. Credit of this type can be more effective in increasing the productivity of agriculture than any of the other types.

Long term loans may be extended up to 40 years. This credit in almost all cases is used for the purchase of real estate.

"While these three forms of credit are used most commonly today," he continued, "new concepts in agricultural financing are being developed.

"The first of these is quite familiar to any one connected with the poultry industry; that is, integration," said Mr. Mangum. "Integration or contract farming in any business refers to the combining of small units into one larger unit under one management.

Integration to Increase

"Regardless of your opinion of integrated arrangements, this form of business organization will increase in egg production. Economic forces pushing hard for more integration are (1) the high capital requirements brought about by the demand for mechanization, the larger volume needed to compete and the rise in operating costs, (2) consumer demand for uniform products brought about by quality control, and (3) the economic necessity for processors to have a constant flow of raw material through their plants."

The second method he discussed was incorporation, a systematic means of combining the capital of many. This form of business organization can also offer tax advantages and ways of reducing inheritance taxes.

Next, Mr. Mangum spoke of the budgeted farm production loan. Usually when capital is needed, the farmer negotiates a loan in the spring and pays it off in the fall; or in the case of the egg producer, when chicks are purchased and paid for when eggs are sold.

"The last form of credit for financing modern agriculture," he explained, "is currently in common use in commercial and manufacturing areas, and, to me, holds the most promise for providing a workable solution. This type is an open line of credit, using real estate as collateral security."

Under this arrangement, he continued, financing of the entire farm business can be obtained with one lending agency rather than financing one enterprise this month with one organization and another shortly thereafter with another. Under a revolving system of credit, you would have year-round financing to draw on as needed for feed, chicks, tractors, etc.

Farmers, he added, will find it increasingly difficult to borrow a large sum of money unless they are prepared to furnish the necessary records. These should include a net worth statement stating all assets and liabilities, and an operating statement for several years past showing gross income, operating expenses and net worth.

The second thing the farmer can do is to improve his planning ahead. He should present a credit plan that includes (1) the amount needed, (2) exactly what it will be used for, (3) how this loan will make or save money, (4) repayment schedule showing exactly how he intends to repay the loan, and (5) a list of collateral that can be offered as security.

"Lastly," Mr. Mangum concluded, "the borrower can improve his credit position by observing the four 'C's' of credit: (1) capital, meaning the size of the borrower's equity in the farm; (2) character, the credit reputation and ability of the borrower; (3) capacity, the ability of the farm to yield net income; and (4) collateral, the value of security offered for the loan."

Federal Egg Controls

Poultrymen were also told that federal controls on egg production would work to the disadvantage of producers in North Carolina and other areas that are seeking to expand their egg output.

Dr. Richard A. King, agricultural economist at North Carolina State College, said that adoption of controls based on output in a given historical period would require sacrificing growth prospects in return for price stability for producers already in the business.

In the short run, Dr. King said that supply control might increase the price of eggs, but it's doubtful, he asserted, "that the poultry industry would gain from an attempt to limit the output of eggs over the long pull."

One reason for this, he added, is that consumers might substitute other food items for eggs and the downtrend in per capita egg consumption "might well be substantially extended."

The fact that poultry producers are scattered over wide geographic areas and have different costs of production and costs of marketing results in a diversity of outlook. In general, it appears that producers in areas with lower production costs favor the continuation of a free competitive industry, Dr. King said.

He added that so long as there is wide divergence of opinion among egg producers, it is unlikely that Congress will authorize a production control program.

Harold E. Ford, executive secretary of Southeastern Poultry & Egg Assn., told the group that the Southeast possesses several natural advantages in egg production and eggs from this area now are recognized as being equal in quality to those from any other section.

Regional Marketing

"To maintain the competitive position that you now have, and to capitalize on your advantages," Mr. Ford said, "let me suggest that you give serious consideration to working with other states on a program that will coordinate the movement of eggs to markets."

Mr. Ford proposed a "central clearing" through which movement of southeastern eggs into New York and other large areas "could be so scheduled that they would not break the market."

The Southeast, he asserted, is in a position to increase its egg production many times faster than other areas cut back.

"So it becomes necessary for you to create new markets, develop local outlets and move your eggs to market in an orderly manner," he said.

With current egg prices good, Mr. Ford said, it may be difficult for producers to "get excited" about creating a powerful regional marketing agency.

"But," he cautioned, "let me suggest that you not become too complacent."

Broiler Prices Hold Their Own

SALISBURY, MD.—Broiler prices held their own last week in Delmarva in spite of the normal decrease in demand at holiday time plus the fact there are about 10% more broilers this year.

The average price paid on the farm was 16.29¢ for the week ending Nov. 19. The price had slipped from the previous week's 17.63¢. A year ago, however, the price had slumped to 14.69¢.

Hatcherymen in the 22 important broiler producing states set 43,333,000 eggs last week. This was 1% above the previous week and 8% above the corresponding week a year ago. Settings were up from the previous week in 14 of the 22 reporting states. States for which sizeable increases were reported include Maryland, Indiana and Georgia.

Placements in the 22 states totaled 30,061,000 broiler chicks. This was 1% above the previous week and 11% above the corresponding week a year ago. Increases were reported for 15 states compared with the previous week. States showing appreciable increases include Delaware and North Carolina.

Raymond J. Higgins, General Mills, Dies

HOT SPRINGS, ARK.—Raymond Jack Higgins, 55, Hot Springs, divisional sales manager of the southern region of General Mills, Inc., died Saturday, Nov. 19, at a Hot Springs hospital after suffering an apparent heart attaack.

Mr. Higgins was well known in Arkansas agricultural circles, particularly in the poultry industry. He was active in civic, business and fraternal organizations.

At the time of his death, he was serving as national chairman of the trade barriers and government action committee on the international trade development group of the poultry industry. The group was working to overcome trade barriers and to inaugurate trade with foreign consumers for U.S. poultry products.

Survivors include the widow and a sister.

Financing Granted Spain for Bean Oil

By JOHN CIPPERLY
Feedstuffs Washington Correspondent

WASHINGTON—This week Spain was granted a procurement authorization by the International Cooperation Administration covering financing of approximately 112,000 metric tons of crude soybean oil in bulk.

Government sources say that shortly ICA will announce another procurement program for Spain for approximately 35,000-50,000 metric tons of soybean oil meal.

Regarding the oil procurement, the contracting period is fixed between a starting date of Nov. 28 and concluding March 31, 1961. Final delivery date for the oil is May 31, 1961.

ICA intervened in the Spanish oil procurement situation due to an urgent demand for soybean oil from that nation and it was decided that ICA could move with more speed than if the transaction had been handled by Foreign Agricultural Service. This comment is not meant to indicate that FAS cannot move expeditiously.

FEEDLOT INCORPORATED

DENVER, COLO. — Yuma Feed Lots, Inc., has filed articles of incorporation, listing $999,000 authorized capitalization to carry on a general cattle and livestock feeding and grazing business. Incorporators-directors include Everett W. Scott, Edgar W. Perlenfein and Mark M. Mulder.

Ohio State Livestock Specialist Receives Extension Award

CHICAGO—Wilbur H. Bruner, extension specialist in animal science at Ohio State University, has won the 1960 Animal Production Extension Award for outstanding service to the nation's animal agriculture.

W. H. Bruner

The award was initiated in 1959 by Chas. Pfizer & Co., Inc., in cooperation with the American Society of Animal Production. Mr. Bruner received the $1,000 award Nov. 25 during official sessions of the society's annual meeting in Chicago.

Dr. Herbert G. Luther, scientific director of both domestic and overseas agricultural operations for Chas. Pfizer & Co., Inc., made the presentation. The first award, given last year, went to Harry G. Russell, livestock specialist at the University of Illinois.

Mr. Bruner's career in Ohio agricultural activities is distinguished by his leadership in developing the state's Swine Improvement Program, which has served as a forerunner of a series of similar programs in other states. He is generally recognized as one of the prominent pioneers in swine improvement work. He joined the Ohio State staff as a swine marketing specialist in 1949, after serving as a county agent.

The extension award winner has directed the Ohio Swine Improvement Program since 1954, when the Swine Evaluation Station was established.

At the start of this year, nearly 1,200 litters had been tested at the station, 678 of which met certification standards.

Because of Mr. Bruner's continuing efforts in swine certification, meat-type sires and dams recommended by the Ohio Swine Improvement Program today are eagerly sought by market representatives, commercial producers and swine breeders, it was pointed out. Various commercial swine producers who have followed his advice on selecting boars have reported that the percentage of No. 1's sold from their herds exceeds 80%.

The Ohio swine specialist was raised on a farm in Fulton County, Ohio. He graduated from Ohio State University in 1927, and later carried on graduate studies at Cornell University and Ohio State.

Mr. Bruner served as secretary and manager of the Ohio Wool Growers Cooperative Assn. for two years before joining the Ohio State staff. He immediately tackled the state's swine marketing problems, setting up state and local advisory committees to help find a way to improve understanding of meat-type qualities and to secure differential pricing of market hogs by value.

INTERNATIONAL MILLING GIVES TURKEYS, HAMS

MINNEAPOLIS — A total of over 8,600 turkeys and hams weighing approximately 130,000 lb. are being given this year by International Milling Co. to its employees at nearly 50 plants and sales offices in the U.S., Canada and Venezuela.

Employees had a choice of either a medium or large size turkey or ham for Thanksgiving, and will have the same option again at Christmas time.

The practice of giving Thanksgiving and Christmas turkeys and hams was instituted by F. A. Bean, Sr., founder of the company, over 50 years ago.

Archery Expert Gives Chicago Club Talk

CHICAGO—Some rather startling facts about archery were given to the Chicago Feed Club at its regular dinner meeting at the Illinois Athletic Club here Nov. 18 by Arnold Henderlong, Hammond, Ind., famous exponent of the sport of bow and arrow hunting.

Mr. Henderlong, introduced by Russell Paarlberg, Farm Bureau Milling Co., Hammond, disclosed that more people since the beginning of history have been killed in warfare by the bow and arrow than by any other weapon. Hunting bows carry more power than a regular army rifle, he said.

Mr. Henderlong has put an arrow completely through a 300-lb. bear lengthwise, starting at its head. He has killed animals with an arrow ranging from a rat through deer, rabbit, mountain lion, wild burro, elk, in addition to fish, ducks and pheasant. He has won all awards possible in the National Field Archers Assn., as well as the Michigan and Wisconsin Bow Hunters Assn. Sixty five to seventy five yards is the usual effective range, but 941 yards is the record distance for an arrow in flight.

Stuart A. Campbell, W. R. Grace & Co., program committee chairman, gave a preview of the Christmas party planned for Dec. 12, also to be at the Illinois Athletic Club. A one and one half hour variety show, employing several highly recommended acts, is planned. A record attendance is expected for this party and those who plan to attend are urged to make reservations early.

CLOVIS STOCKYARDS' OFFICER

CLOVIS, N.M. — Dick Worley of Worley Mills, Inc., here has been elected president of the Clovis Stockyards Assn.

QUESTIONS

(Continued from page 1)

Manufacturers Assn. and the Grain & Feed Dealers National Assn. (Feedstuffs, Nov. 19.)

One of the principal questions developing as a result of the meeting was whether local mixers using conventional concentrates which contain certain drugs must have effective new drug applications and meet certain other FDA requirements. Premix use at the local level also is involved.

Some questions and confusion apparently developed as a result of a talk by an FDA official. However, any further clarification at this time is awaiting FDA release of the text of the talk. Also, additional meetings are expected to be held between FDA and industry on this and other problems.

It is understood that legally FDA controls extend to the final mixing of a finished feed, but an industry view has been that full controls need not extend to the local mixer using a conventional protein concentrate made by a feed manufacturer who handles the basic drug premix and meets all FDA labeling and other requirements. Some feel that local mixers using drug premixes should be subject to FDA requirements but that there is no safety problem in use of conventional concentrates.

There apparently is some implication that FDA's view is that anyone handling a drug-containing product, including concentrates, needs FDA clearance. Some in industry, on the other hand, feel that if first incorporation into a feed product of a regulated drug is checked, that is sufficient and controls need not reach into all levels of mixing, including blending of concentrates with grain at the local mill or farm level.

At any rate, there appear to be some questions and differences of opinion in regard to use of concentrates and premixes, and further consideration of FDA requirements and compliance in this area is expected.

W. E. Glennon, AFMA president, said following the meeting Nov. 18 that further industry views on various FDA problems will be developed and that further meetings are expected.

Other Topics

Among other topics discussed at the first meeting, according to Mr. Glennon and Al Oliver of GFDNA were the grandfather clause, interstate commerce provisions, pesticide residues and low level antibiotic labeling.

At this time, it appears that problems resulting from the Delaney and grandfather clauses will not relax. As previously reported, the specific name of an antibiotic must now be used in labeling low-level antibiotic feeds; industry is opposed to the proposed stating of levels used in the low-level feeds. As for interstate commerce provisions, the meeting again brought out the point that if a drug moves in interstate commerce, the feed manufacturer comes under FDA requirements even though his feed operations are intrastate.

NUTRENA

(Continued from page 4)

agri-businessmen, and offers poultrymen a workable answer to today's stiffening competitive challenges."

He further commented, "Many interested stores are now supplied individually by various producers, but supplies change as flocks come into or go out of production, and the volume of top quality eggs has not been dependable enough to justify a marketwide sales promotion program.

"Grocery officials agree with us that egg producers, retailers and consumers all will gain considerably if one consistent grade can be produced and promoted in the southern Wisconsin-northern Illinois market."

Several regional grocery firms have shown substantial interest in the project and in becoming the exclusive retail outlet, he said.

Mr. Rudolph of Nutrena reported that the 10,000-bird "high density layer system" building prototype at Nutrena's 820-acre Elk River, Minn., research farm has been inspected by several of the future participants. He said five of the commercial houses already are in successful operation in central and southern states (Feedstuffs, Oct. 15).

The "high density" structure is a windowless, pole-type building employing automated equipment to ventilate, feed, water, nest, light and gather eggs from the heavily concentrated bird population.

INDUSTRY

(Continued from page 1)

Mr. Larrick was not able to attend the meeting himself.

It is expected that the issue will be resolved. Both sides have seen some blind spots in the understanding of the problems involved, but there is mutual effort under way to erase such obscurities. There is no danger of a sudden slap-down on the feed industry at any level.

The general FDA policy is that it cannot permit dangerous drugs to get into irresponsible hands. Mr. Larrick indicates that the main purpose of FDA is to assure that when premixes and certain concentrates come into the hands of feed mixers, these mixers will have to show FDA that they have an efficient plant and competent personnel and equipment for proper distribution of a substance in a feed. It also may be said that FDA will not be easy to convince as to assurance of complete safety of a feed product which contains additives.

However, it appears to this reporter that there should not be immediate cause for alarm. Some fog has now been cleared, and after Mr. Larrick has reviewed the record, more sessions will be held.

Conversations with officials close to the commissioner indicate that a community of interest is developing.

It would be incorrect to assume that FDA is intent on slapping down on all farm and local mixing per se. They do not have the enforcement staff to do such a job. But it seems probable that there will be checks on distribution of concentrates or premixes along the line so that there will be no mis-use or mis-labeling by custom mixers or feeders.

CALVES

(Continued from page 1)

body gains and the low ratio of feed required per pound of gain thus far obtained, this method of feeding cattle is being tested further," the report said.

The report, published in a Pennsylvania State University publication, tells of a preliminary study made to raise and observe cattle fed a roughage-free, low-fiber ration from birth to an acceptable slaughter weight of approximately 1,000 lb. The data reported at this time by Jack Phillips, instructor in animal industry and nutrition at Penn State, include the performance of cattle from an average initial weight at 102 lb. at 24 hours to an average weight of 588 lb. at 196 days of age.

Mr. Phillips' report, which appeared in Penn State's "Science for the Farmer," goes on as follows:

Early attempts to raise cattle on a concentrate ration devoid of roughage have been made by a number of workers using cattle of varying initial weights and ages. Failures encountered were attributed to a lack of bulk in the ration. This assumption now appears to be misleading since later data have been presented which question the necessity of bulk in the diet of cattle. The initial weights and ages, as well as pre-experimental feeding, seem to be important considerations determining the subsequent performance of cattle on roughage-free diets.

Since cattle are born essentially single-stomach animals, it seems probable that maximum utilization of a roughage-free, low fiber diet might be obtained if this type of feeding were started at an early age prior to becoming adjusted to the consumption of fiber.

Method

After 24 hours with their dams, 2 male calves of dairy breeding were weighed and combined in an experimental swine pen. This pen was constructed with a concrete floor and steel sides. A foam rubber mat which was cleaned daily was used as bedding. The calves were fed a commercial milk replacer (protein, 24; fat, 1; fiber, 1%) from nipple buckets for the first 7 weeks. Their ration was composed of 3 parts commercial pig starter pellets (protein, 17; fat, 3.5; fiber, 3.5%) and 1 part cracked corn for the next 12 weeks. For the remaining portion of the experiment, a period of nine weeks, the calves received a ration consisting solely of commercial pig grower pellets (protein, 16; fat, 5; fiber, 4%).

In addition, water and a mineral mixture, consisting of equal parts of limestone, steamed bone meal, and trace mineralized salt, were given free-choice to the calves at all times.

The two calves were weighed individually at 4 p.m. each Friday, their weights recorded, and their combined feed consumption for the 7-day period noted. Average daily gains and the pounds of feed per pound of gain for the 196 days by 28-day periods are shown in the table.

Observations

1. Grossly, the skeletal development of calves fed a roughage-free ration appears to be normal; however, one of the calves walks with a slightly abnormal gait but without apparent discomfort.

2. No bloating has been observed in either calf.

3. Both calves appear to be normal with respect to health, vigor, haircoat, appetite and sexual behavior.

4. Both calves appear to be trimmer-middled than calves ordinarily fed a ration including roughage.

5. Both calves have demonstrated regurgitation and cud-chewing, but to a lesser extent than cattle fed a ration including roughage.

6. The odor of the feces of these calves has continually differed from that of calves fed a diet including roughage. Throughout the test the appearance of the feces has been somewhat unusual, being of a more pasty consistency and containing very little undigested grain. The feces has more closely resembled that of swine in color, consistency, and odor than that of calves fed a diet containing roughage.

7. While early daily gains did not exceed those reported by workers in veal production studies, during the last 84 days gains have exceeded those previously reported for calves of this age, size, and condition.

8. The ratio of feed to gain observed in this preliminary study more closely approximates that of swine than that which normally occurs with cattle.

9. The foam rubber mat used as bedding had to be removed after six weeks because of being bitten and chewed by the calves. The calves demonstrated excessive cribbing during the entire period.

Average Daily Gain and Feed Required Per Pound of Gain by 28-Day Periods for 196 Days—Jan. 22 to Aug. 5, 1960

28-Day period	Average daily gain	Feed required per lb. of gain
	lb.	lb.
1-22-60 to 2-19-60 ..	1.21	2.57
2-19-60 to 3-18-60 ..	1.29	2.41
3-18-60 to 4-15-60 ..	1.88	1.76
4-15-60 to 5-13-60 ..	1.92	2.47
5-13-60 to 6-10-60 ..	3.52	2.48
6-10-60 to 7- 8-60 ..	3.66	3.15
7- 8-60 to 8- 5-60 ..	3.88	2.85
Total 196 days..	2.48	2.66

FEED PLANT

(Continued from page 1)

will provide improved service in an area which has been important to General Mills over a period of many years," stated Mr. Woolley.

The East Point Mill at Shenandoah has a long history. It once shipped flour and feed into most areas of Virginia as well as the Southeast. The mill has now been converted into a modern push-button feed facility. The first production of Larro feeds in the new mill is scheduled for Dec. 1.

Mr. Woolley also announced that John Heath will be the operation control manager at Shenandoah for General Mills. Mr. Heath has had 10 years of sales and feed production experience for this assignment.

SALES MANAGER

(Continued from page 1)

field will be responsible for Ful-O-Pep feed sales in the company's marketing areas throughout the U.S. His headquarters will be in Chicago.

Mr. Crutchfield joined the company in 1940 as a retail cereal salesman in west Texas. He advanced through administrative posts in cereal sales work, then switched to the feed department as a Ful-O-Pep district representative in 1947. Eight years later, he became manager of the Southwest feed division.

He is a graduate of Texas Wesleyan College.

His successor as manager of the Southwest feed division has not been announced.

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Putting Research To Work

BY SPENCER H. MORRISON, PH.D., D. V. M.

Nutrition of Salmonoid Fishes. VIII. Indispensable Amino Acids for Sockeye Salmon.

● J. E. Halver and W. E. Shanks, U.S. Fish and Wildlife Service, Western Fish Nutrition Laboratory, Cook, Wash., The Journal of Nutrition, Vol. 72, No. 3, pp. 340-346, November, 1960.

ABSTRACT AND COMMENT

For a number of years the researchers at the Western Fish Laboratory have investigated various nutritional requirements of salmonoid fishes. Working largely with chinook salmon, they established vitamin, protein, and essential amino acid requirements for this species (1957, 1958). The data on protein requirements showed that this species of salmon had differing optimum protein requirements at different water temperatures. For example, it was shown that at 47° F. water temperature, 40% protein was best, but, at 58° F., 55% protein was more desirable. Since fish have such high protein requirements and since these requirements are much greater than those of birds or mammals it was deemed important to investigate the possibility of specie differences between requirements for amino acids.

For the current trials, another commercially important variety, sockeye salmon, was selected as the test subject for comparison with the results previously obtained with chinook salmon. For this trial 17 amino acids (L) were tested at levels considered to furnish an excess over the minimum requirements for reasonable growth previously established at this station. The water temperature was approximately 51.8° F., an intermediate range between those temperatures previously used to establish the protein requirements of chinook salmon fingerlings.

Specific amino acid deficient diets were prepared by deleting one amino acid from the basal ration and replacing it with a-cellulose flour. Growth with these diets was then compared with that obtained with the basal ration. On basis of the results a comparison is possible between the previously obtained one with chinook salmon and those currently obtained with sockeye salmon as follows:

AMINO ACID REQUIRED?	Chinook salmon	Sockeye salmon
Arginine	Yes	Yes
Histidine	Yes	Yes
Isoleucine	Yes	Yes
Leucine	Yes	Yes
Lysine	Yes	Yes
Methionine	Yes	Yes
Phenylalanine	Yes	Yes
Threonine	Yes	Yes
Tryptophan	Yes	Yes
Valine	Yes	Yes
Alanine	No	No
Aspartic acid	No	No
Cystine	No	No
Glutamic acid	No	No
Glycine	No	Probable No
Proline	No	No
Hydroxy-proline	No	No (by inspection)
Serine	No	No (by inspection)
Tyrosine	No	No

It can be readily seen from the above tabulation that the amino acid requirement patterns for these two species of salmonoid fish are probably similar. It is interesting to observe that these fishes appear to have no essential amino acid requirement for cystine, in contrast to many animals. Also, there appeared to be no partial biosynthesis of any of the required amino acids in the experiments with the two varieties of salmon. Although, not actually tested it appears not unreasonable to guess that fish of the same general class, i.e., trout, would require the same amino acid patterns. This type of information may not appear to be important to the large bulk of feed manufacturers, but it is certainly extremely important to those specializing in the production of fish foods for hatcheries and commercial trout farms. In the future we can expect more information which will critically define the requirements in actual percentages of protein in the diet, or grams of nitrogen per kilogram of diet.

●

Timely and Worth Noting

Several groups of workers, but especially those at the Federal Plant and Soil Laboratory at Ithaca, N.Y., and those at North Carolina State College, have been very active recently in developing purified diets for ruminants. Mention of this has been made before from time to time in this column as results have been forthcoming. The group at North Carolina State has now published a paper (J. Nutr., Vol. 72, No. 3, pp. 277-282) entitled "Investigation of Precursors of Ruminal Fatty Acids of Sheep Fed Purified Diets" by Van Campen and Matrone.

Using both in vitro and in vivo techniques, it was shown that when "C" labeled bicarbonate was incorporated in the diet, the labeled carbon was found mostly in propionate. Also, the specific activity of valerate exceeded that of either acetate or butyrate. In contrast, acetate-2-C^{14} appeared to be incorporated chiefly in acetate, butyrate and valerate with

(Turn to REASEARCH, page 94)

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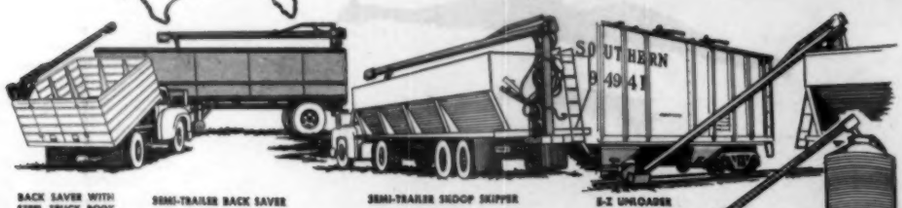

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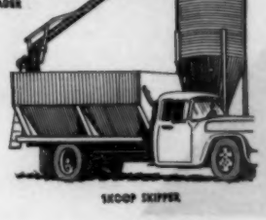

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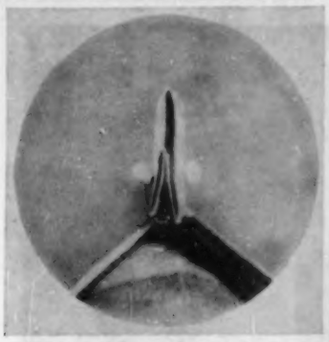

IMPACTAPE — This enlarged photo shows the new ImpacTape of the West Virginia Pulp & Paper Co. with application on the sewn end of a multiwall bag. The four plies of tape and the tufted ends of the thread and filler cord used in sewing are visible.

4-Ply Kraft Tape Closure Announced

NEW YORK — A four-ply kraft tape closure called ImpacTape, which is said to double the impact resistance of sewn-end multiwall bags, has been introduced by West Virginia Pulp & Paper Co.

According to Victor S. Luke, manager of the company's Multiwall Bag Division, the new closure tape minimizes bag breakage at the sewing line, which accounts for 70% of all sewn multiwall bag failures. The firm has applied for a patent on the new closure.

The ImpacTape closure consists of a piece of kraft tape, the edges of which have been folded under the sewing line, with the needle passing through four layers of tape instead of two layers as in the conventional closure, the company reports.

The double-duty sewn tape is said to provide a minimum of twice the impact resistance of standard sewn closures. In addition to the strength imparted by the four sewn tape plies, the inward fold of the tape further cushions the sewing line against sudden shock, according to the paper company.

The development of the new tape closure stemmed from studies of bag breakage carried out by the company when it introduced Clupak extensible paper as a new material for multiwall bags, Mr. Luke said.

The company's laboratory found that even when tensile readings are high, breakage at the sewn ends can occur. The reason for this is that while the tensile of a sewn end normally varies less than 10%, its ability to absorb shock can vary up to 200%. In other words, tensile strength can be high and sewn end toughness can be inadequate.

As a result of these findings, the company's packaging laboratory in Charleston, S.C., worked out a method of using the impact resistance tester to register the toughness of a sewn end by duplicating the shocks met under field conditions.

Mr. Luke said that ImpacTape is now available on all closures made in West Virginia's bag plants and that testing of new modification equipment is now in the final stages. This equipment will make it possible to apply ImpacTape to sewn open mouth bags after filling.

R. Coughenour Heads Kansas City Feed Club

KANSAS CITY — Robert G. Coughenour of the Rodney Milling Co. has been elected president of the Kansas City Feed Club. He succeeds Richard Schoop of Albers Milling Co., who presided at the group's meeting.

Other officers elected were Morten I. Sosland, The Southwestern Miller, vice president; Richard Kuelpman, Ralston Purina Co., secretary; William Frederick, Cereal By-Products Co., treasurer.

Herbert Ricker of the Commander Larabee division, Archer-Daniels-Midland Co., was elected chairman of the executive committee. Two new members chosen for this group were Buell B. Sailor, Rodney Milling Co., and Neil L. Sosland, The Southwestern Miller.

Members of the auditing committee elected were: Wayne P. Anderson, Norris Grain Co., chairman; Jack Conway, General Mills, Inc.; Max L. Jamerson, International Milling Co., and Robert McNamara, Checkerboard Grain Co.

Firm's Earnings Drop

NORFOLK, VA.—W. R. Ashburn, president of Smith-Douglass Co., announced that company earnings for the first quarter were $438,414, as compared to $645,922 for the like period last year.

Earnings were 40¢ per share for the current year, compared with 63¢ for the prior year. Mr. Ashburn pointed out that 15¢ of the differential resulted from a favorable tax position during the first quarter of last year which was not applicable to the current year.

USDA SUSPENDS EGG PURCHASES

WASHINGTON—The U.S. Department of Agriculture has rejected offerings of dried whole egg solids and announced suspension of further purchases. This action was taken, according to USDA, because egg prices to producers have reached a level of parity in excess of the levels authorized under the program.

During the current year USDA has purchased 19,048,125 lb. of dried whole egg solids with $20,702,000 of Section 32 funds.

Wiley Akins Serves On MFMA Board

KANSAS CITY—Wiley Akins, vice president and general manager of the Peter Hand Foundation, Chicago, manufacturer of vitamin fortifiers for the feed industry, is the first representative of the allied industries to be named to the board of directors of the Midwest Feed Manufacturers Assn. Mr. Akins is now serving on the board and attended a recent board meeting.

Wiley Akins

In 1949, prior to joining Peter Hand, Mr. Akins was general manager of a Texas feed manufacturing concern and served as president of the Midwest Feed Manufacturers Assn.

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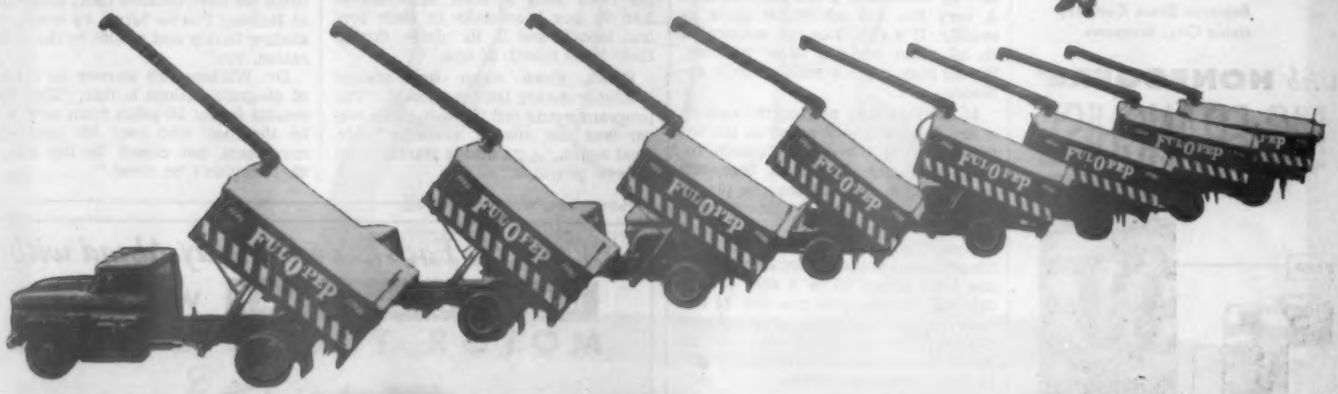

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How Early Can Calves Be Weaned? Four Weeks Seems to Be Latest Answer

Early weaning of calves has been given intensive and extensive study in college and commercial experimental work—and this particular phase of livestock production is of considerable importance to the feed man.

From the University of Minnesota's institute of agriculture and from Iowa State University have come separate reports of calf starting tests—one in which liquid feeding was stopped when calves reached 28 days of age and the other when the animals were 31 days old.

These reports suggest that weaning at 4 weeks can be a practical calf management practice.

Below are details of the studies conducted at Iowa and Minnesota. The Iowa research was reported in a news release last week, and the Minnesota report is from an article in a recent issue of Minnesota Farm and Home Science, an extension publication, by W. A. Olson, research fellow, and Dr. J. B. Williams, department of dairy husbandry.

Liquid Discontinued After 28 Days of Age

ST. PAUL—At what age can herd replacement calves be weaned successfully?

University of Minnesota research workers have attempted to evaluate the most economical program of calf feeding that still maintains sound health. In the last few months, 64 calves on various rations have been used in early weaning experiments. Both whole milk and milk replacers have been fed. Feeding has been limited to not exceed 4 lb. of liquid per 100 lb. body weight per feeding. A home-grown ground grain supplement was offered from the fourth day of age. Clean water was available to the calves at all times. Each day a new supply of good quality legume hay was made available to the calf.

All liquid feeding was stopped when the calves reached 28 days of age. The calves gained an average of over ½ lb. per day through the 28th day of age. During this time they consumed an average of 0.37 lb. of grain supplement per day. For the two weeks after weaning, they consumed 2.35 lb. of grain supplement per day while gaining over 1 lb. per day.

Most calves rapidly adjusted to the decrease in nutrient intake from the milk or milk replacer portion of the diet by increasing grain consumption. A very few did not adjust quite as readily. If a calf does not consume 1 lb. of grain per day after weaning, it still may require milk or milk replacer.

It is likely that placing the calf on a dry diet early will assist in the development of the calf's stomach toward maturity. If this is true, the age at which the calf may be placed on a total roughage or pasture diet may be decreased. This will further reduce the cost of raising herd replacements. Weaning at four weeks has been shown to be a very practical calf management practice. It can save marketable milk or purchased milk replacer. In Minnesota tests, all but a few calves have responded well to early weaning practice.

Says Palatable Starter, Fresh Water Are Musts

AMES, IOWA — Calves grew normally without milk or any other liquid feed after they were 31 days old on a calf starter program developed at Iowa State University, Joseph W. Rust, dairy researcher, reports.

The feeding schedule used, Mr. Rust says, was: First three days, remain with dam; 4-24 days of age, whole milk at the rate of 8% of the calf's body weight daily; 25-31 days of age, whole milk at the rate of 4% of the calf's body weight.

Throughout this period the calves had free access to a starter composed of 40 lb. coarsely ground corn, 27 lb. crushed oats, 20 lb. soybean meal, 10 lb. molasses, 2 lb. dicalcium phosphate, 1 lb. iodized salt and 68 gm. of trace mineral premix. Hay was not offered the calves because of the design of the experiment, but they were fed vitamin A and D supplement weekly. However, the researchers recommended good legume or grass-legume hay be offered as soon as the calves will eat it.

This system saved 185 lb. of milk per calf in comparison with a similar system in which milk was fed to 52 days of age, Mr. Rust says. Calves started on the program gained 0.7 lb. per head daily in their first month, 1.46 lb. per head daily in their second month and 2 lb. daily during their third month of age.

Fresh, clean water was always available during the test period. "The program would fail if fresh, clean water was not always available," Mr. Rust notes. "A palatable starter must also be provided."

S. Howes Co. Names Sales Vice President

SILVER CREEK, N.Y. — The appointment of George R. Willis as vice president in charge of sales for the S. Howes Co., has been announced by Alexis C. Barbeau, Jr., company president.

George R. Willis

Mr. Willis joined S. Howes in 1955 as a sales representative, and in 1957 was named sales manager. In his new capacity, Mr. Willis will have over-all responsibility for directing the company's sales activities in every section of the country. His assistant will be Willard C. Martin.

Researcher Explains All-Grain Rations For Beef Feeding

RENO, NEV. — "'All-concentrate' is a poor way to describe the beef feeding method rapidly gaining popularity in the country right now," says Dr. J. L. Williamson, manager of the beef cattle and sheep research division for Ralston Purina Co., St. Louis. "The words 'low roughage-high concentrate' more accurately describe the ration."

Dr. Williamson was addressing the 7th annual Nevada Feed Conference sponsored by the University of Nevada, in Reno. His topic was "All-Concentrate Rations for Beef Cattle."

"It is possible," he says, "to have an all-grain ration because the grains that have been used successfully have a built-in roughage factor." Among these grains, Dr. Williamson lists barley, oats, ground ear corn and milo with cotton seed hulls added. (Research at the Ralston Purina farms shows that it is necessary to add cotton seed hulls to milo to get enough bulk to avert digestive disturbances.)

The researcher emphasized two precautions that are necessary if feeders are to be successful in using the low roughage-high concentrate ration for beef cattle.

The most successful trials, he reported, required about two weeks to get the cattle on full feed. During this time, forage was offered free choice. The amount of grain fed was increased each day until the animals were on full feed.

Secondly, Dr. Williamson warned livestock feeders to keep cattle on full feed once they are there. Steers will founder if they do not have free access to grain at all times when fed an all-grain ration. He advised feeders to keep a close eye on the cattle and not to mistake other problems for digestive upsets.

"The success of all-grain feeding, as with other methods, depends on the ration having the proper supplements to balance it," he said. "We think we have avoided bloat problems at Ralston Purina farms by never including barley and alfalfa in the same ration, too."

Dr. Williamson's answer to critics of all-grain rations is this: "The successful feeder 10 years from now will be the man who kept his eyes and ears open, not closed, to the things that 'couldn't be done'."

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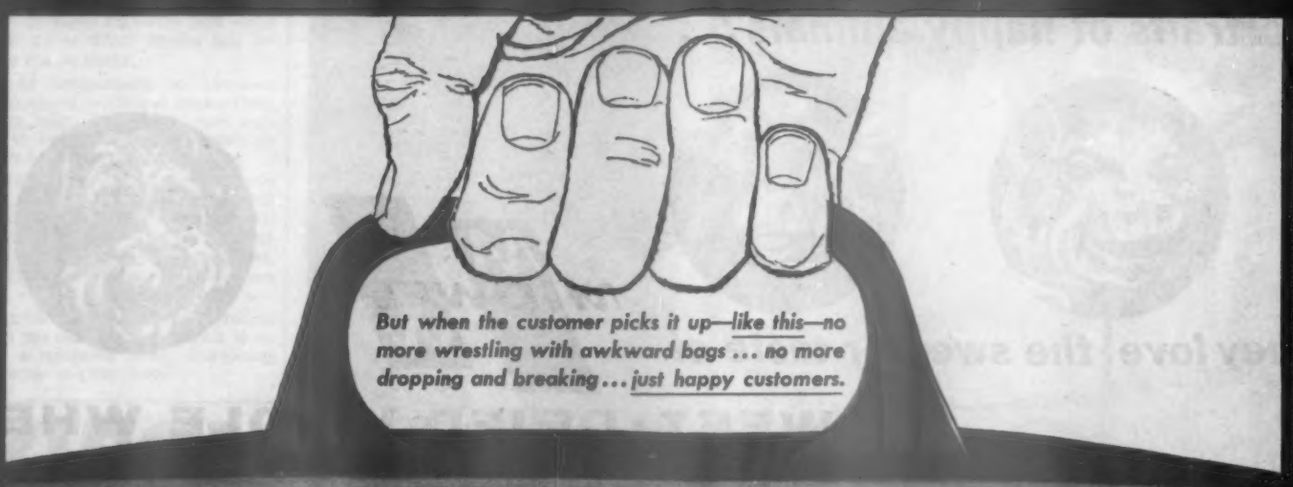
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Swine Breeding Stock

Swine raisers have been advised that their future profits depend a lot on the breeding stock selected this fall. It is wise to use all the information available when picking out boars and gilts, Ray Arthaud, extension livestock specialist at the University of Minnesota, says.

He commented that litter size is only about 10% heritable but is so important that it must be continually emphasized.

He says to look for gilts with at least 12 sound, functional nipples and further says the boar should have 12 or more sound nipples since he will pass the trait to the future sow herd he sires.

Growth rate is important, he said. The swine raiser should set his minimum standards for 180 day growth at 240 lb. or more for boars and at least 220 lb. for gilts, he commented.

Backfat measurement is best measured by probing when hogs weigh about 200 lb. At that weight a boar should have 1.2 in. or less, a gilt not over 1.4 in., the livestock specialist stated. He suggested use of testing station results on litter mates or other relatives whenever possible.

He also said that breeding stock should be sound in feet, legs and other body parts and free from defects, particularly heritable traits such as hernia and cryptorchidism in the male.

◆

Eggroom Planning

Owners of laying flocks have been advised that eggrooms should be planned for maintenance of egg quality, convenient working and economy of construction and operation.

David D. Jackson, extension poultryman at Purdue University, pointed out that because every situation is different, only suggestions can be offered on the eggroom that will fit a particular farm.

Travel distance can be reduced from the laying houses to the egg room by having that facility centrally located. He said that such a location will reduce the tendency to allow eggs to accumulate in baskets in the feedrooms.

For worker comfort and to maintain egg quality and economy of operation Mr. Jackson suggests the use of two rooms. One room should be mechanically refrigerated — held at about 50° F. and 75-80% relative humidity. The second room would serve as a workroom for cleaning and packing eggs. Mr. Jackson recommends keeping the temperature of the workroom as low as possible, still maintaining satisfactory working conditions, preferably below 65°.

Regarding size, Mr. Jackson recommends holding space for one week's production, about 16 cases per 1,000 layers. He says there should be slatted racks for egg baskets so cool air can circulate around the warm eggs.

He also recommends use of an evaporator fan to maintain low velocity air movement over warm eggs and avoid warm spots and insulation to reduce operating costs.

◆

B.H.C. Approval Removed

Farmers have been advised that B.H.C. (benzene hexachloride) has been removed from the U.S. Department of Agriculture's approved list of livestock sprays and dips and should not be used, according to Dr. William W. Brown, extension veterinarian at Colorado State University, Ft. Collins. He says the reason given for blacklisting B.H.C. is the possibility of residues remaining in the meat of slaughter animals. It was never approved for use on dairy cattle, nor are the other systemic parasite controls approved for dairy cattle in production.

For meat animals, Lindane, Toxaphene, Co-Ral and Korlan are approved as sprays and dips, provided manufacturers' instructions on the container are followed.

Systemic compounds for the control of parasites penetrate the skin of the animal and work through the animal's system, the extension veterinarian said. Some are given orally as a bolus.

◆

Ready Broiler Houses

Commercial broiler growers have been reminded to have their houses ready for winter weather. Milton Y. Dendy, extension poultryman at the University of Georgia, said that condemnation losses suffered last winter and spring point out that growers must provide better growing conditions for their birds. He said that many houses will require more heat and a more uniform heat. Many houses allow temperature fluctuations in excess of 20°.

He says that a house should be capable of maintaining a temperature of at least 50° and that walls, windows and closures should be checked to see that drafts and heat loss are kept down.

Hinged flaps to close ridge ventilators on one or both sides should be ready for winter weather and supplementary heaters should be in good working condition. Mr. Dendy also recommends storing some drying shavings or sawdust if space is available since litter usually becomes scarce in the winter and spring.

A warning was also issued to growers to be on the lookout for fowl pox.

◆

Heifer Growth Rate

As dairy heifers are brought into the barn for winter, it is a good idea to check their rate of growth, according to Harvey E. Shaffer of Pennsylvania State University. Heifers that are a year old are just about half-

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way to freshening and they should be almost large enough to be bred, he commented.

He explained that if these heifers have failed to grow as rapidly as they should, due to poor pasture or other reasons, there is still time to do something about it. First, one should determine whether they are growing at a normal rate. Compare their weights, estimated by means of a cattle tape, with normal growth, he suggests. And, if they are under size, they should be given an opportunity to catch up during the next few months.

Mr. Shaffer says this indicates a good feeding program needs to be built around all the good quality hay the heifers can eat. They should be fed enough grain to maintain rigid growth without becoming fat. It is a good idea to have a veterinarian check them for internal parasites, as this is often the reason for retarded growth.

Well grown heifers make the most profitable cows, he stated. They can freshen at an earlier age, produce more milk and are less apt to be hampered by diseases.

◆

Protein for Cattle

The best investment a cattleman can make this winter is to be sure his cattle are fed the extra protein supplement they need, according to Dr. T. J. Cunha, head of the Florida Agricultural Experiment Station's animal husbandry department. He says that lack of protein is still one of the most common nutritional deficiencies encountered in the winter.

He reports experiments have shown that for every dollar spent for needed protein supplementation during the winter a cattleman can expect two dollars in increased returns.

He reports that protein deficiency costs cattlemen a great deal of money. Cattle lacking in protein lose weight, do not produce regularly and wean smaller calves which means less return to the producer.

Protein supplementation increases the appetite of cattle and causes them to graze more. The forage they consume is better utilized because of the extra protein they are getting.

Experiment station studies have shown that a lack of protein will cause cows to fail to come into heat, take more services before getting settled and fail to become pregnant, the Florida animal husbandman states.

He urges earlier feeding of protein than in the past beginning with ¼ to ½ lb. supplement daily, increasing it as cattle require more.

Design New Building To Study Caged Layers

COLLEGE PARK, MD.—The new experimental poultry building at the University of Maryland is designed for studies on the general problem of caged layer production. The house is a clear span building measuring 110 ft. by 38 ft. It is windowless and pressure ventilated. Location of the building is within the compound of present farm structures at the College Park poultry farm.

Dr. C. S. Shaffner, head of the poultry department, explains that for the first year, physiological studies will be done in the area of fertility on methods of preserving and diluting fowl semen. Work in nutrition will consist of a number of studies.

The house has space for five rows of laying cages that have a total capacity of 2,500 hens. Each row of cages is double decked. To prevent feed contamination from feed spilled from the upper cages, the bottom rows of cages will be used for the physiological studies, while the upper cages will be used for nutritional studies.

For establishing the pressure ventilation system, Dr. Shaffner explains, the ceiling and inner walls of the building are lined with insulation board covered with aluminum sheathing on both surfaces.

A thermostat controls the blowers so that fresh air from the outside can be blended with inside air to keep the desired temperature. When necessary, all of either type of air is circulated and mixed to achieve proper ventilation.

In event of electrical power failure or extremely hot weather, ventilation will be done by raising the hinged, continuous panels around the base of the building.

Other construction features of the building include a lower wall of three rows of concrete blocks set on the conventional concrete footing. Remainder of the walls consists of 8-ft. panels above the blocks. Roof of the building is aluminum.

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What's behind the recently discovered shortages of Vitamin A in beef?

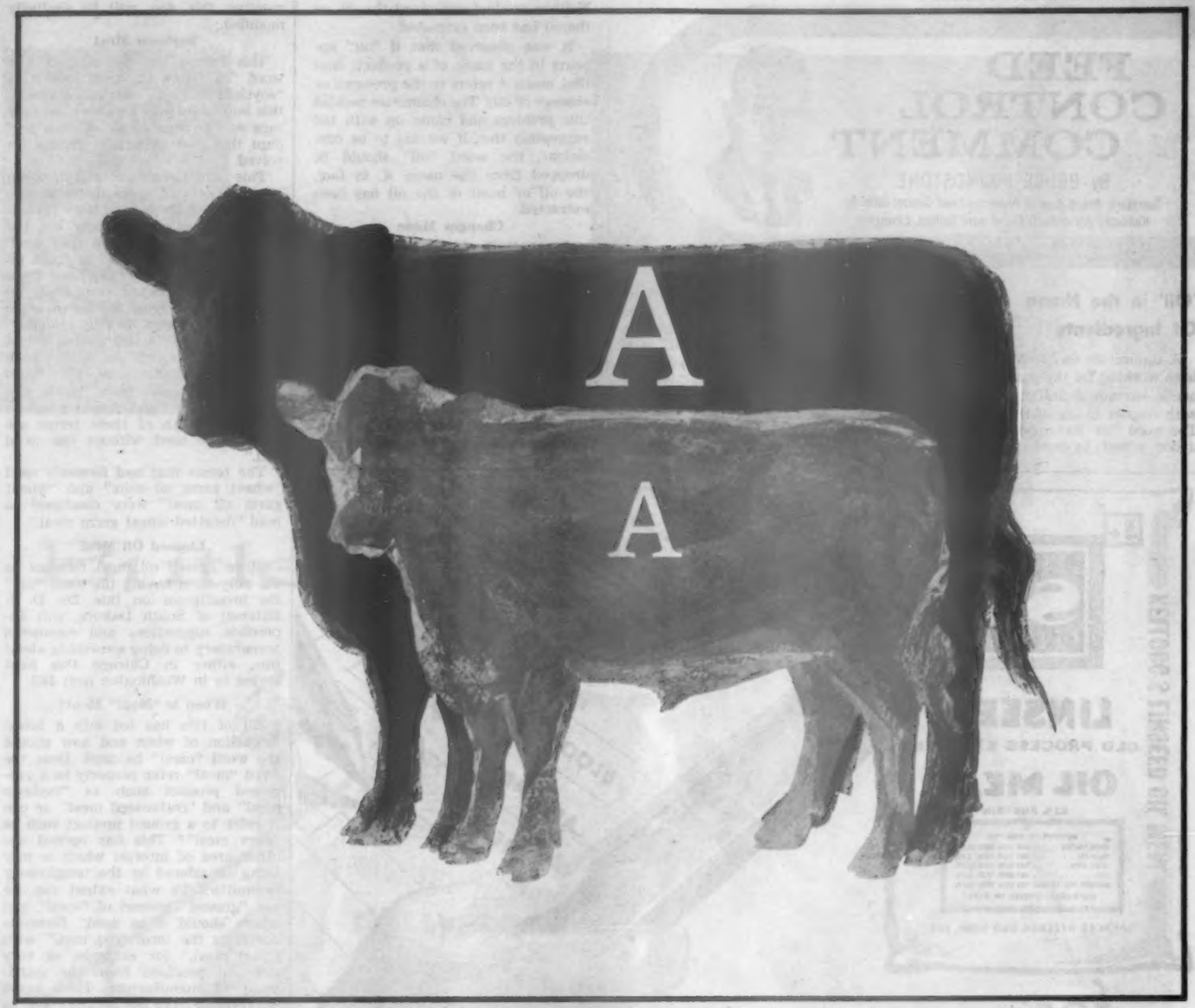
With nutritional researchers digging deeper into cattle performance, more and more cattle problems are being diagnosed as vitamin A deficiencies. It's a diagnosis that is exploding many of the old notions on vitamin A requirements.

For instance, Illinois studies showed that beef animals on rations supposedly adequate in vitamin A sources came up seriously deficient.

From this study and many others, several theories have been proposed by leading nutritionists as to possible causes of shortages:

- *Less reliance can be placed on the carotene content of forage and other feedstuffs as well as the efficiency of conversion by cattle.*
- *Recommended levels of vitamin A in the past may not have been high enough to supply the optimum growth performance.*
- *High temperatures can increase vitamin A requirements.*
- *Phosphorus deficiencies may lower carotene conversion efficiency.*
- *Nitrates in corn silage or hay apparently reduce carotene utilization.*
- *Previous vitamin A nutrition affects the efficiency of carotene conversion.*
- *Carotene disappears fast from wet corn. Old corn also may be short of carotene.*

Research is continuing in order to discover the exact cause behind these problems.



...and how to make sure your feeds supply enough

A recent article in *Feedstuffs* on an Iowa Field Day, for example, quotes a leading beef nutritionist as recommending feeders insure the performance of their ration with supplemental levels of vitamin A. An extra $1-$1.50 cost per ton would make sure there was enough vitamin A present without worrying about the conversion of carotene to vitamin A.

High-quality supplements can't work if animals are held back by unexpected vitamin A shortages in other feedstuffs and forage.

USDA studies, for example, show that from 75-90% of the carotene content of alfalfa hay and silage may be lost before feeding. And carotene conversion may not be as high as it has formerly been considered.

An Illinois study shows that preformed vitamin A was at least twice as efficient as the carotene in alfalfa meal in restoring blood and liver vitamin A of deficient calves.

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FEED CONTROL COMMENT

By BRUCE POUNDSTONE
Secretary, Association of American Feed Control Officials
Kentucky Agricultural Experiment Station, Lexington

'Oil' in the Name Of Ingredients

A committee on "terminology" has been working for the past year to reconcile certain definitions and terms with respect to use of the word "oil." The word "oil" has appeared in terms under wheat by-products, peanut products, soybean products, cottonseed products, flax products, corn products and grain sorghums. In most instances where the word "oil" is a part of the name, it referred to a product resulting from extracting the oil. In the case of cottonseed the resulting product was referred to as "cottonseed meal." The opposite was true in the case of "soybean oil meal." Neither product contained the oil, as the oil had been extracted.

It was observed that if "oil" appears in the name of a product, does that mean it refers to the presence or absence of oil? The committee tackled this problem and came up with the suggestion that if we are to be consistent, the word "oil" should be dropped from the name if, in fact, the oil or most of the oil has been extracted.

Changes Made

As a result of this the respective investigators were approached and during the past several months they have been working with industry in an effort to correct this. A very definite move forward was made at the last AAFCO meeting in that these investigators with but one exception recommended and the association adopted this plan for such ingredients. The exception was "linseed" and the industry is working on the problem and it is expected by next year's meeting this, too, will be similarly modified.

Soybean Meal

This means the dropping of the word "oil" from the term known as "soybean oil meal." Beginning Jan. 1, this ingredient will be shown on feed tags as "soybean meal." This is perhaps the most important change involved.

This effort focused attention on other aspects of these definitions so that some of them have been rewritten. For example, not only has the word "oil" been dropped from such terms as "corn oil cake" or "corn oil flakes" and "corn oil meal" but these terms were dropped completely in favor of new terms for "corn germ meal." Corn germ meal is manufactured either by the dry milling or wet milling process and the oil has been removed in either case. The word "oil" was dropped from "grain sorghum oil cake" and "grain sorghum oil meal." Both of these terms are now to be used without the word "oil."

The terms that had formerly read "wheat germ oil cake" and "wheat germ oil meal" were combined to read "defatted wheat germ meal."

Linseed Oil Meal

Since linseed oil meal remains as the only term having the word "oil," the investigator on this, Dr. D. J. Mitchell of South Dakota, will appreciate suggestions and comments preparatory to doing something about this, either in Chicago this next spring or in Washington next fall.

When is "Meal" Meal?

All of this has led into a broad discussion of when and how should the word "meal" be used. Does the word "meal" refer properly to a processed product such as "soybean meal" and "cottonseed meal" or can it refer to a ground product such as "corn meal"? This has opened another area of interest which is now being considered by the terminology committee. To what extent can we use "ground" instead of "meal" and where should it be used? Someone contrasts the term "oat meal" with "corn meal," for example, as very different products from the standpoint of manufacture. Here again suggestions from the industry will be appreciated by either the terminology committee or the investigator for the particular subject involved. Letters may also be mailed to me.

Vacancy Filled

INDIANAPOLIS—The board of directors of Grain Dealers Mutual Insurance Co., meeting here, named D. Clay Cook, Omaha, Neb., as first vice president to succeed R. D. MacDaniel, who died Oct. 26. W. C. Bright was elected secretary.

Mr. Cook joined the mill and elevator department of the company in 1922 and later supervised general business operations in New York and the New England states. He went to Omaha as western manager in 1947 and became vice president in 1959.

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Urinary Calculi Studied At South Dakota; Rules For Treatment Listed

BROOKINGS, S.D.—Among nutritional diseases of the nation, urinary calculi is exceeded only by bloat and poisonous plants as a cause of death, according to an article by Drs. R. J. Emerick and L. B. Embry, South Dakota State College, appearing in South Dakota Farm and Home Research magazine.

The term urinary calculi is used to describe deposits of solid material (principally mineral matter) within the urinary tract. The calculi, which may occur as single stones or as gravel-like concretions approaching the consistency of sand, are often named according to their location within the urinary tract.

Symptoms do not generally occur until the stones grow large enough to lodge in the urinary tract and block the flow of urine. The exact causes and methods of preventing this disease are not known.

After studying the problem at South Dakota State College, scientists Emerick and Embry do have some recommendations, however.

Recommendations

Surgery is the most successful treatment for existing cases of urinary calculi. The relief afforded calculi-prone animals, however, may be only temporary.

No single preventive method has been devised for the prevention of calculi. In general, applying the following rules should help minimize losses due to urinary calculi.

1. Provide an adequate water supply at all times. An adequate water intake helps to assure proper elimination of excretory products without creating an excessively concentrated urine.

Encourage water consumption by keeping it clean, readily available, and warm in the winter. Quite often water consumption can be increased by feeding modest amounts of salt in the ration. Some experiment stations report that lambs perform satisfactorily on rations containing as high as 10% salt, though this level is probably higher than necessary. The amount of salt used should not be large enough to reduce consumption of the ration.

2. Supplement high concentrate rations (normally high in phosphorus) with a calcium source such as ground limestone when being fed for long periods to bulls, steers, rams, and wethers.

3. Feed good quality legume hay whenever possible. It is a good source of calcium and is also slightly diuretic.

4. If siliceous calculi have been previously encountered you may have to limit, or in some cases completely avoid, the use of high silica feeds.

By following these recommendations, you should minimize losses due to urinary calculi under most conditions. Due to the complexity of the problem, however, some calculi may occur regardless of the precautions you take.

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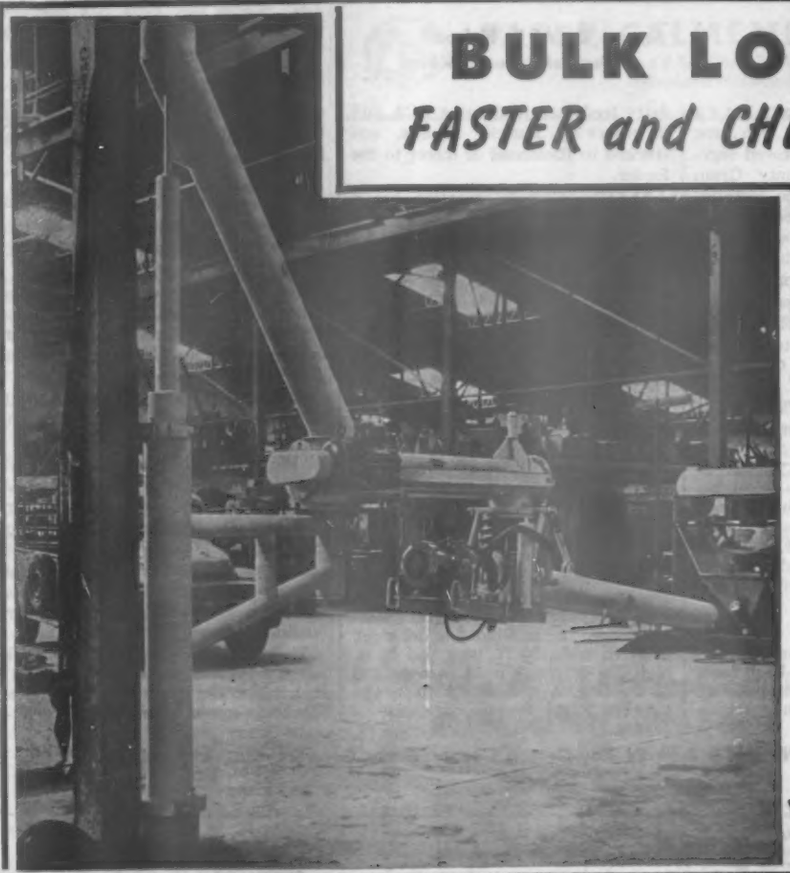

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NEW MILL—Standing beside 80,000-bu. grain elevator (left) is new feed mill erected at Richmond, Mo., by Ray-Carroll County Grain Growers, Inc., a cooperative which has customers in Ray and Carroll counties of Missouri.

MIXER—Leroy Swofford, foreman of new mill at Richmond, Mo., operates Prater mixer. Against wall behind him is a small fat tank.

Service Needs Met With New Mill, Warehouse

By Al P. Nelson
Feedstuffs Special Writer

Feeders in a two-county area northeast of Kansas City, Mo., are offered expanded and improved services by Ray-Carroll County Grain Growers, Inc., through the facilities of a modern semi-automated feed mill erected at Richmond, Mo., about a year and a half ago and a large warehouse completed in the spring of 1960.

The cooperative, managed by Robert Thompson, has its headquarters at Richmond and operates branch stations at Wakenda, Carrollton, Hardin and Norborne, Mo. Richmond and Hardin are in Ray County and the other towns are in Carroll County.

Several Consumers Cooperative Assn. registered feeds are manufactured from the base up in the new mill. A CCA fortifier is used. In addition, reports Lee Carter, manager of the cooperative's feed division, a large volume of custom grinding and mixing is done.

Pelleting

Leroy Swofford, mill foreman, reports that all of the firm's lamb feeds and most of its hog feeds are pelleted. At present, pelleted, high molasses dairy feeds are made at a CCA mill in nearby Muncie, Kansas, and trucked to Richmond or direct to the feeder.

The Ray-Carroll operation has a California pellet mill, cooler and scalper. Mr. Swofford says 75% of the pelleted feeds produced at Richmond are of the 3/16-in. size. No hay is used in pellets made at the plant.

About 50% of the firm's feeds are shipped in bulk. "Our discount on formula feed is $6 ton," Mr. Carter says. "And we charge 5¢ cwt. for sacking."

Ernst-Spencer Engineering Co., Topeka, Kansas, designed and erected the mill and supplied the equipment. The mill has 24 steel storage bins with a total capacity of 270 tons. These are used for the storage of grain, pellets, rolled and pulverized grains and bulk mill feeds.

The new feed mill stands near an existing, concrete storage elevator, which provides additional grain storage space. The mill building, all steel, is 24 ft. wide, 30 ft. long and 48 ft. high. Its driveway is 14 ft. wide and 36 ft. long. A new 40 by 70-ft. Columbian Rigid Frame warehouse is attached to the west side of the mill building. Also attached is an office building measuring 30 by 50 ft.

Equipment

Equipment includes a 50 h.p. Prater hammermill with 15 h.p. on the blower. The firm also uses a 2-ton, and a 1-ton Prater mixer.

The suspended hopper scale has a capacity of 3,000 lb. and is Fairbanks equipped. A Wenger molasses mixer is kept busy in the production of dairy feeds for local customers.

Since the firm uses a great deal of crimped grain in its hog feeds, it has a Roskamp grain roller.

"We charge 15¢ for grinding and 10¢ for mixing, with comparable crimping charges," says Mr. Carter who came to the company from the Poultrymen's Cooperative Assn. of Lancaster, Cal. "This 30-in. double duty grain roller will roll corn, oats or milo, all of which we use in our feeding program."

The mill also has a Grain Belt weigh buggy, a Bender truck hoist, Richardson bagging equipment and a Fischbein sewer. There are two sacking bins, one for mash and one for pellets.

ROLLER MILL—Roskamp grain roller is operated here by employee of Richmond, Mo., firm, which uses crimped grain in its hog feeds.

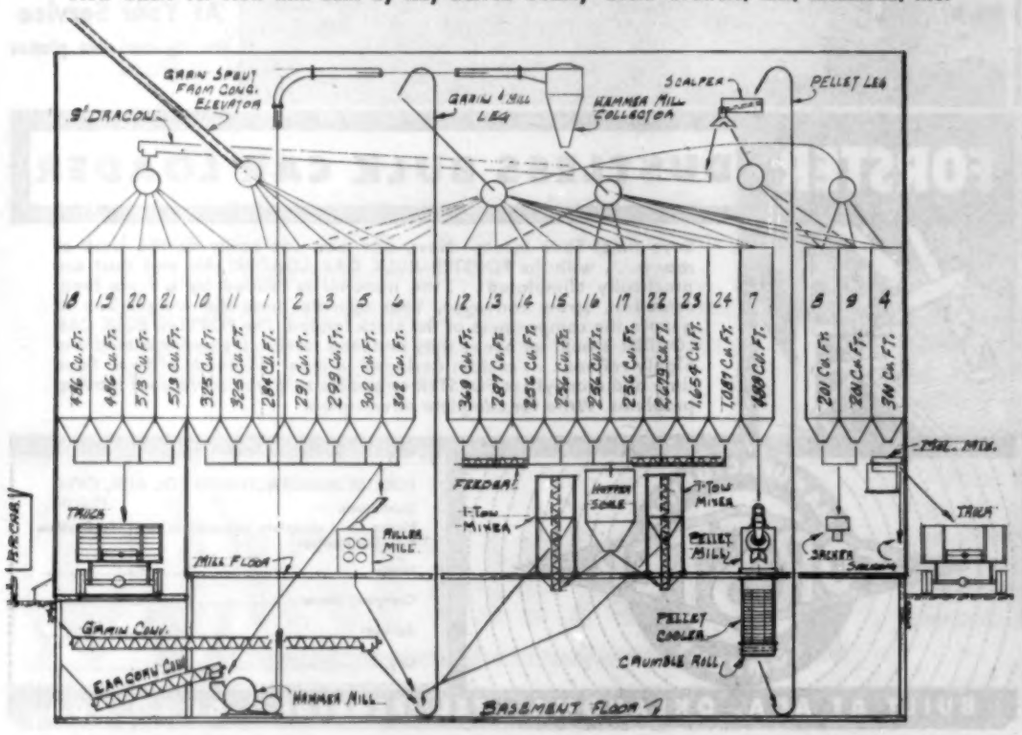
Over the loadout area, there are four holding bins, each of 15 tons capacity. This facilitates the making and storing of feed and the shipping of it via bulk truck or the feeder's own truck. The Ray-Carroll firm has a 7-ton Simonsen bulk truck with auger bottom. It can be used for bag or bulk hauling.

Pallets Used

Mr. Thompson notes that all bagged feed and ingredients are placed on pallets and moved on an Ezy-Tilt pallet hand truck (manufactured by the Valley Craft Products Co., Inc., Lake City, Minn.).

"Even though our feed is sold at five different locations, it is only handled once by putting it on the pallet when manufactured and taking it off when sold," he says.

Flow Chart for New Mill Built By Ray-Carroll County Grain Growers, Inc., Richmond, Mo.



BAGGING — Smith Bates, assistant feed division manager for cooperative headquartered at Richmond, Mo., is shown at Richardson bagger.

Newspaper, Patron Group, Credit Policy Aid Firm in Its Feed Merchandising Effort

Ray-Carroll County Grain Growers, Inc., is aware of the many merchandising ideas available to a feed manufacturer or dealer—and it makes good use of those that fit into its operation.

The following list of the ones the Richmond, Mo., firm puts to work may suggest something new to other feed enterprises.

The cooperative:

—publishes a four-page newspaper twice a month and sends it to 4,000 farmers, telling them of the feed, petroleum, fertilizer and farm store services they can obtain from the firm;

—has organized a patron feed advisory committee of 15 persons, including a few farm women;

—stages "Neighbor Night" events for the entertainment of farmers and their wives;

—has established a new and tighter credit control policy;

—and has initiated an effective grain bank program.

Newspaper

Told in the firm's semi-monthly newspaper are news stories about the cooperative and its farmer patrons, and it contains articles on feeding advice.

Robert Thompson, manager of the cooperative, edits the newspaper. And Lee Carter, feed division manager, and Jim Marshall, petroleum department manager, write columns for the publication.

The staff uses a Polaroid camera for taking local pictures of interest to the cooperative's customers, and one or more appear in each issue.

"Including printing and postage costs, this publication costs the firm about 3¢ per copy," states Mr. Thompson. "Our customers tell us the paper is widely read and helps them a great deal in their farming operations.

"Through its columns we are able to publicize every department of our business. We also publish ads of various products and services. We feel that the issuance of such a publication is very well worth the price as a business and good will builder and also as an educational medium."

CONTROLS—Employee of Ray-Carroll County Grain Growers, Inc., operates panel of controls in the cooperative's new mill.

MOLASSES BLENDER—A Wenger molasses blender was mounted in an elevated position in the Richmond, Mo., feed plant.

CONVERSATION—Lee Carter (standing), feed division manager for Ray-Carroll County Grain Growers, Inc., chats with farmer outside new mill at Richmond, Mo.

Credit Policy

The cooperative's new credit policy stipulates that when accounts are not paid by the 10th of the month following purchase an interest charge of 1% per month is levied.

"Such a policy has helped us reduce the number of accounts receivable and also has reduced the delinquent accounts considerably," reports Mr. Thompson. "To supplement and make our credit plan work we have feed contracts available for our customers. These contracts are written through local banks, local Productive Credit Assn. or through our own credit union."

Mr. Carter reports that many patrons have subscribed to Ray-Carroll's grain bank plan because "in these days of high-priced farm labor, it saves busy farmers time and money," and they know it.

An elevator near the cooperative's new feed plant has storage capacity of 80,000 bu. All corn coming into the grain bank is dried to 15% with an American grain drier.

Farmers who put grain into the bank pay a monthly storage charge of 2¢ bu. They also pay in and out charges.

Advisory Committee

Members of the co-op's patron feed advisory committee represent the farm family units served by the firm. They, as a body, advise the firm's management concerning services, products, operational efficiency and business volume.

"Notice that we have included some farm women on these committees," Mr. Thompson remarks. "We are aware of the important part that women play in the successful farm enterprise. The more they know about farm problems, the better they can help in suggesting solutions.

"We also have made a special effort to interest some of the younger farmers in this advisory work. Committee members serve one- or two-year terms and the chairmanship for various meetings is rotated. In this manner we get the benefits of leadership from numerous committee members."

Mr. Carter spends as much time as he can with farmers, learning about their feed, seed and fertilizer needs and advising them.

"This type of outside selling and service pays off," he says, "for farmers will really open up and tell their problems to the man who takes time to visit them at their farms.

"In today's competitive market you've got to know the farmer's feed problem and how to meet it. To do that, you've got to get out and see his herds and flocks and talk things over right on the spot."

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MONTANA SALES MEETING—Attending a recent meeting of the Ceretana Feed Division of Montana Flour Mills Co. at Lincoln, Mont. were these 26 persons directly concerned with the Ceretana Division. Left to right, first row, Stewart Miller, Missoula; Gene Ries, Carter; Allen Turvey, Bozeman; A. C. Anderson, Bozeman; Doris Koosch, Great Falls; Joe Eisenman, Fairfield; Henry Kahler, Great Falls; Stan Meyer, Great Falls. Second row, Dr. W. H. Burkitt, Great Falls; Ralph Montgomery, Chinook; C. G. McClave, president of the company, Great Falls; Robert Melvin, Fairfield; Henry Enochson, Great Falls; Roy Meyers, Missoula; Leo McDonnell, Billings; Harry C. Johnson, vice president and manager of the feed division, Great Falls. Back row, Robert Kramer, Missoula; George Mason, Great Falls; Borden Wall, Havre; Wm. Fluegel, Great Falls; Oliver Thorvilson, manager of the Montana Elevator Division, Great Falls; Tom Apple, Lewistown; Verle Doan, Idaho Falls; Raleigh Yuhas, Bozeman; and Wesley McEwen, Belgrade.

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One of the country's oldest and largest manufacturers of vitamin and base mineral products.

To Build Poultry Lab

PRESTON, MD.—A Poultry Diagnostic Laboratory will be established in the building formerly occupied by the Provident State Bank on Main Street here.

It may be ready to serve the upper Eastern Shore in 60 days.

The project is being developed by the Extension Service of the University of Maryland. The Caroline County commissioners will provide $1,000 annually for maintenance. Aiding in setting up the laboratory are John Hargreaves and Paul A. Croll of Caroline Poultry Farms, Inc., Federalsburg, and Edward H. Covell of J. McKenny Willis & Son, Easton.

Mr. Covell said that about 6 million broilers and 245,000 layers and 66,000 turkeys are raised annually in the Preston service area. The nearest laboratory at present is in Salisbury.

Nebraska Reports on Safflower Meal Tests

LINCOLN, NEB.—Researchers at the University of Nebraska Agricultural Experiment Station here recently completed feed lot trials using safflower meal as a protein supplement with prairie hay and/or corn silage.

In one experiment, six lots of weanling calves were fed a basic ration of prairie hay. Three supplements (soybean oil meal, safflower meal made from unhulled seed by the expeller process, and a combination of safflower meal and urea) were each fed to provide two levels of supplemental protein (N x 6.25). One level was approximately twice the other.

Gains made by calves fed soybean oil meal and safflower meal to provide approximately the same level of protein were approximately the same. Gains made by calves fed the combination of safflower meal and urea were lower than for the calves fed the other two supplements. This was more marked at the lower level of supplemental protein feedings than at the higher.

Calves fed the higher level of supplemental protein made larger average daily gains than those fed the lower level. They also required more supplement and less hay per unit of gain, Nebraska reports.

Nine lots of calves were fed corn silage with the same three supplements as those fed with the prairie hay. In this case they were fed at three levels with one lot on each supplement fed approximately one-and-one-half times and one lot twice as much as the third lot.

Differences in average daily gains between supplements were slight.

As the level of supplemental protein fed increased, the average daily gains tended to increase. Also, more supplement and less silage were required per unit of gain.

Since more safflower meal or the combination of safflower meal and urea than soybean oil meal was required to provide the same level of protein, more of these supplements were required per unit of gain, Nebraska researchers report.

Bradley & Baker Territory Manager

NEW YORK—Bradley & Baker has announced the appointment of Freeman C. Swartz, who has been active in the feed trade in the Delmarva - Pennsylvania area, as manager of the territory covered by the firm's Baltimore office.

Freeman Swartz

Mr. Swartz, who has been associated with the Delmarva - Pennsylvania trade for eight years, assumed his responsibilities with Bradley & Baker Nov. 1 at the company offices located at 8118 Harford Road, Baltimore.

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- Unloads 1,000 lbs. per minute.
- Handles molasses feeds easily.
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- 6" auger easy to attach or detach from truck.
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- All models come complete with hoses, power take-off, and hydraulic pump.
- Fills 12 ft. bins with standard auger — 16 ft. bins wih 6 ft. folding extension.
- Models available for trucks with hoist.
- The U-2 model can be used to load trucks.
- Mounting is easy! Simply cut hole in floor and bolt trap unit on underside.

Quick couplers for hydraulic lines, optional. A simple ratchet chain hoist raises and lowers the auger.

WRITE, WIRE OR PHONE COLLECT for further information about the U-2, 4, 6 unloaders, plus a full line of bulk feed bodies, bulk sack bodies, bulk fertilizer bodies, and the new Simonsen Feedilizer, a bulk feed bulk fertilizer body. All Simonsen equipment is performance-tested.

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What Is Being Done to Combat *THE PROBLEM OF THIN SHELLS?*

"The problem of thin shells is one that is dependent on many known factors which may increase or decrease its degree of severity. The evidence to date shows clearly that the condition is one resulting from a change in the metabolic state of the animal. The positive evidence which has been shown by the laboratory concerning supplementary vitamin C suggests that this vitamin is involved in this metabolic change. The results also indicate that the problem is a complex one and infer that many other metabolites may also be involved."

By Dr. Paul A. Thornton
Colorado State University

Dr. Paul A. Thornton

AUTHOR—Dr. Thornton is an associate professor of poultry husbandry at Colorado State University, where he has been a member of the staff since December, 1955. He received his B.S. degree in 1949 from the University of Kentucky and his M.S. degree at the same university in 1953. He received his Ph.D. degree from Michigan State University in 1956. His fields of interest include: dietary energy level and nutrient requirements, calcium metabolism in rachitic and normal chicks and supplementary vitamin C in poultry rations.

The problem of thin egg shells during the hot summer months has been recognized by researchers, feed manufacturers, poultry farmers and others associated with the industry for many years. The monetary loss in the U.S. due to this condition has been estimated to be as high as $100 million annually (Ralston Purina Co., 1957); thus, it is a serious problem from the economy viewpoint.

Several factors appear to be involved in the determination of egg shell thickness. For example, it is well-known that shell thickness is an inherited characteristic with certain strains laying eggs which are markedly thicker than others. The age of the bird also seems to have some influence since advancing age is usually associated with thinner shell production. Certain virus diseases such as infectious bronchitis and Newcastle result in a marked deterioration in shell structure. Nutritional factors that normally need to be considered in direct relation to shell quality are calcium, phosphorus, manganese and vitamin D. The level required of each of these nutrients for normal egg shell quality has been thoroughly investigated and recommendations for each are currently given by the National Research Council, 1954.

Even though the geneticists have developed strains of birds which lay eggs with thicker shells and the feed manufacturer provides a feed which is adequate in the known necessary nutrients and all other precautions are taken, we still have the problem of thin egg shells developing during the hot summer months. Thus, it appears that the environmental factor is one of vital importance in bringing about this condition.

The decline in shell strength and thickness during the summer has been measured by Warren and Schnepel (1940), Wilhelm (1940) and Brant et al. (1953). Conrad (1939) showed that the calcium carrying capacity of the bird's blood was reduced when the animal was exposed to high environmental temperatures. The latter evidence suggests a possible explanation for the thin shell condition in that a lower calcium blood level may well influence the quantity of shell secreted, particularly in view of the rapidity in which the shell is formed.

THE METABOLIC RATE AND ITS INFLUENCE ON SHELL THICKNESS—Since thyroid activity is known to be reduced by increasing environmental temperatures, it appears that the rate of thyroxine output may have some effect on egg shell thickness. Several workers have obtained results which indicated that thinning of the shell could be the result of a retarded thyroid activity. For example, Asmundson and Pinsky (1935), Gutteridge and Novikoff (1947), Hoffman and Wheeler (1948) and Berg and Bearse (1951) showed that stimulation of thyroidal activity helped maintain the shell content of the egg in hot weather. These findings were valuable in that they showed rather clearly that the rate of thyroid activity, thus metabolic rate, was implicated in shell formation. Unfortunately, this treatment can not be applied on a practical basis since thyroid stimulation is sometimes associated with the inducement of molt.

The disturbance in calcium metabolism which occurs in chickens during warm weather as exemplified by a decreased shell content and a reduced calcium blood level indicates that some factor concerned with the metabolism of this mineral may be deficient. Since the condition appears during the time when thyroid activity is decreased, it seems probable that the metabolic rate may inhibit the synthesis of some physiologically essential nutrient. In this respect it seems probable that vitamin C or ascorbic acid could be such a factor.

THE INFLUENCE OF HIGH ENVIRONMENTAL TEMPERATURE ON SYNTHESIS OF VITAMIN C—It has been accepted that chickens do not need supplemental ascorbic acid in their diet since it is known that this animal species can synthesize its own. In spite of this conclusion, very little is known concerning the ability of the chicken to synthesize vitamin C under different environmental conditions. Although the ability to synthesize vitamin C under varying environmental conditions has not been investigated in the chicken, results with other animal species indicate that the animal may partially lose this ability under heat stress. For example, Goldfine (1956) showed that the urinary excretion of ascorbic acid by white rats was diminished when these animals were subjected to heat stress. Similarly, Squibb et al. (1954) observed that serum ascorbic acid levels were decreased in white rats under high temperature conditions. Since the white rat is similar to the chicken in that it synthesizes its vitamin C, it is probable that the avian species may also partially lose this ability in warm weather.

DISTURBANCE OF CALCIUM METABOLISM IN SCORBUTIC ANIMALS—There is also a disturbance in calcium metabolism during time of ascorbic acid deficiency in those animals which are unable to synthesize this vitamin. Bourne (1942) found that bone repair was greatly stimulated in scorbutic guinea pigs when ascorbic acid was supplemented. Fish and Harris (1934) pointed out that although some calcium salts may be deposited in the teeth of patients with scurvy, normal deposition does not take place. Such skeletal abnormalities as beading of the ribs have been observed in both scorbutic infants and monkeys (Hart and Tessing, 1913).

RESEARCH CONCERNING USE OF VITAMIN C IN HEN RATION—In view of the apparent effects of high temperatures on shell thickness in the chicken and the similarity to the symptoms of ascorbic acid deficiency in other animal species, a research project was initiated to determine the effects of vitamin C in the hen. The first report on this project (Thornton and Moreng, 1958) indicated that supplementary vitamin C was effective for maintaining shell thickness and strength when added to the ration at a level of 10 or 20 mg. per pound. It was also observed in this study that the interior egg quality was improved at 5 and 10 mg. vitamin C levels but not at the 20 mg. level. No effect was observed on egg production in that study or any conducted since that time.

In another study (Thornton and Moreng, 1959) it was observed again that egg shell thickness was maintained at a greater level in birds given dietary vitamin C under heat stress. In the same study it was also noted that the metabolic rate of the vitamin C supplemented birds remained higher under heat stress than did the controls. This conclusion is based on the observations that body weight, feed consumption and oxygen utilization were all maintained at a higher level in vitamin C birds than in controls. These results suggested a relationship between vitamin C and metabolic activity. In this case it appeared that the metabolic rate of the bird was stimulated by dietary ascorbic acid. This observation and the work of Goldfine (1956) and Squibb et al. (1954) which indicated that the rate of metabolic activity was related to ascorbic acid synthesis, suggest that a symbiotic relationship may exist—that is, that vitamin C is involved in the formation and output of thyroxine. The thyroxine would then influence metabolic rate which in turn may stimulate ascorbic acid synthesis. Before any clearcut conclusions can be made regarding this possibility, further studies will have to be conducted. Recent work (Thornton, 1960) showed that the metabolic rate of the chicken was associated with the blood level of vitamin C, however.

CALCIUM LEVEL AND DIETARY ASCORBIC ACID—Considerable interest has developed recently concerning the possibility of using high calcium levels to combat the thin egg shell problem. Petersen (1959) showed that a calcium level of 3.75% was effective for reducing the normal decline of egg shell quality during the summer months when compared to a 2.25% level. He also found that higher calcium levels gave additional benefits but not of the same magnitude. These results suggest that the current calcium recommendation (National Research Council, 1954) for egg production is not sufficient under present day conditions.

Since all previous work at this station concerning ascorbic acid had been conducted using a ration containing 2.3% calcium, it was of interest to study the response of vitamin C at different calcium levels. Accordingly, a study (Thornton, 1960) was initiated using three different calcium levels (2.0, 2.5 and 3.0) in the absence and presence of 20 mg.

TABLE 1. Composition of the Basal Ration*

Ingredients*	Level
Ground corn	72.0
Soybean meal (50% protein)	16.1
Dehydrated alfalfa (17% protein)	2.5
Ground limestone	4.8
Steamed bone meal	3.5
Salt, iodized	0.5
$MnSO_4$	10 gm./100 lb.
Vitamin mix/100 lb.	
Vitamin A	120,000 U.S.P.
Vitamin D_3	33,750 I.C.U.
Vitamin E (20,000 mg./lb.)	11.35 gm.
Niacin	1,200 mg.
Ca pantothenate	210 mg.
Vitamin B_{12}	0.2 mg.
Riboflavin	100 mg.
Choline chloride (25%)	241 gm.
Menadione	10 mg.

*Calculated calcium and phosphorus levels were approximately 3.0 and 0.8% respectively.

TABLE 2. The Rate of Egg Production

Addition to basal ration	318-Day mean egg production*	April 1-Aug. 15 egg production
None	65.5	52.3
Oct. 1—Vit. C	64.5	51.5
April 1—Vit. C	59.1	48.5
June 1—Vit. C	68.5	56.9

*Per cent production—hen day basis.

TABLE 3. The Influence of Vitamin C on Shell Thickness

Additions to basal ration	Shell thickness (Microns) Oct.	Dec.	Feb.	April	June	July	August
None	316	321	315	310	287	278	276
October—Vitamin C	314	313	308	305	280	277	260
April—Vitamin C	317	313	316	315	291	296	282
June—Vitamin C	318	312	309	305	277	280	265

TABLE 4. The Effect of Vitamin C in the Hen Diet During Warm Weather on Maintenance of Shell Thickness

Addition to basal ration	Shell thickness value as a per cent of that observed April 1-6 June	July	August
None	94.5 ± 0.48	91.2 ± 0.41	88.4 ± 0.54
October—Vitamin C	89.4 ± 0.38**	87.7 ± 0.65**	83.3 ± 0.48**
April—Vitamin C	92.4	91.6	87.1
June—Vitamin C	92.2	91.4	87.7

**Less than the control group to a highly significant degree.

New Process Hetrogen K

(MENADIONE SODIUM BISULFITE)

Premix*

STABILITY

98%

POTENCY RETAINED

Ordinary Vitamin K Premix

STABILITY

70%

POTENCY RETAINED

These astounding figures represent the result of years of research and experimentation by the Heterochemical Corporation to develop and perfect a new method of preparing vitamin K premixes. This assures maximum stability under the most adverse conditions of temperature and humidity. Success has been achieved, and there is now available to the feed industry, at no increase in price, a vitamin K premix they can use with the utmost confidence. With New Process HETROGEN K *the potency in the bag matches the potency on the tag,* whatever the storage circumstances. This high stability is proven by the test data summarized below:

STABILITY— normal storage conditions — 4 gm premix at average room temperature and humidity

	% Potency Retained		
Avg of 3 lots	30 Days	90 Days	120 Days
New Process Hetrogen K Premix	99%	98%	99%
Ordinary Vitamin K Premix	84%	67%	52%

STABILITY— field samples—ordinary vitamin K premix recently secured from feed mills

	% Potency Retained
Average of 7 lots	23%

(Actual potency of individual lots ranged from 0 to 45%)

STABILITY— adverse storage conditions — accelerated storage conditions 113°F at 80% relative humidity

	% Potency Retained after 30 Days	
Premix Potency	Old Style Premix	New Process Hetrogen K
16 gm/lb	49	91
8	27	92
4	39	91

The development of New Process HETROGEN K represents the only real improvement in Vitamin K premixes which has occurred since 1954. For feed manufacturers this new HETROGEN K premix means a reduction in vitamin K fortification costs, elimination of extra overfill, no storage loss and better purchasing position. You can now buy larger quantities at a price advantage, and have complete assurance that you have a product whose potency is reliable and stable, month after month.

Prices of New Process HETROGEN K premix are competitive with ordinary Vitamin K. There is no extra charge for this improved product. A range of graduated potencies from 4 to 64 grams per pound on easy mixing calcite or edible soymeal carrier are available. Let us tell you more about this superior vitamin K premix. Write or phone for full information on New Process HETROGEN K.

*patents pending

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PIONEERS—A reunion of pioneers took place at a Founders Dinner held in conjunction with the 40th stockholders annual meeting of Cooperative G.L.F. Exchange in Syracuse, N.Y. Looking over a 40th anniversary booklet are, from the left: E. L. Worthen, Cornell University, professor emeritus whose fertilizer recommendations were promoted by G.L.F.; Raymond C. Hitchings, Syracuse, the only living member of G.L.F.'s first board of directors; M. E. (Scotty) Campbell, Pompano, Fla., retired G.L.F. secretary, and J. C. Corwith, Water Mill, N.Y., G.L.F. president.

of ascorbic acid per pound of diet. It was observed that the ascorbic acid had no positive effect at the 2.0% level and may have been slightly detrimental. At the 2.5 and 3.0 levels the vitamin C was highly beneficial for maintenance of shell quality during the summer months. These results do not agree with those of Pepper et al. (1960) who reported that vitamin C had no effect on shell quality at 1.0, 2.5 or 4.0% calcium levels. The contrast in results between these two stations may have resulted from several experimental factors. The difference in altitude could be a point since it is known that oxygen tension has some effect on the physiological activity of ascorbic acid. Further, the protein level and source (discussed later) appears to have an influence on whether the chicken reacts to dietary vitamin C. Finally it is possible that the vitamin C under the environment used by Pepper et al. (1960) was unstable and thus lost some of its activity. In some work at this station (Deeb and Thornton, 1959) it was found that both ascorbic acid and sodium ascorbic were almost completely stable in poultry mash up to 30 days after mixing in an environment with a low relative humidity. However, when the feed was stored at 82% relative humidity and 100° F. it was observed that 25% of the total activity was lost at the end of one week. Such results indicate that an increase in relative humidity could be a detriment in studies such as these.

OTHER FACTORS WHICH MAY INFLUENCE VITAMIN C RESPONSE—Reports from the field coming to this office have been conflicting concerning the effectiveness of ascorbic acid. To this date several instances have been noted in this laboratory where no response to vitamin C was obtained. In one case (Thornton, 1960) it was shown that the protein level of the diet was dominant in controlling a response to ascorbic acid. In three separate trials hens showed a definite response to vitamin C at 13% protein level. Concurrently a lack of response was shown at a 17% protein level. Similar ingredients were used in each diet with a shift in the ratio of corn to soybean oil meal being used to effect the change in protein level. These results were not completely unexpected since it has been shown in other animal species that the utilization of ascorbic acid changes with increased dietary protein levels.

The work of Pattersen and Bourquin (1943) indicated that the ascorbic acid requirement of the human was increased at elevated protein levels. Samuels (1948) observed that rats fed a high protein diet exhibited a decrease in concentration of vitamin C in tissues such as the liver, kidney and muscles which metabolize considerable amounts of amino acids. The relationship of vitamin C to the metabolism of specific amino acids—tyrosine and tryptophan (Ichihara, 1954) and proline (Robertson et al. 1959) (Gould and Woessner, 1957)—suggests the importance of protein consideration in such studies.

The time of the year in which vitamin C is added to the diet may also be a factor which could affect its response during hot weather. To determine this influence a trial was started Oct. 1, 1959, using 150 H and N pullets. These birds, housed in individual cages, were placed on the basal ration (Table 1) when approximately six months of age. When a production rate of 50% for the group was reached, the birds were divided into three sub-groups of 50 birds each. The first 50 birds were kept on the basal ration, the second 50 were given this ration supplemented with 20 mg. of ascorbic acid per pound of diet. The last 50 hens were maintained on the basal ration until April 1, 1960, when 25 of the original 50 were given 20 mg. of vitamin C per pound of diet. The last 25 birds were also placed on the vitamin C treatment June 1, 1960.

By employing this design it was possible to test the effects of ascorbic acid when fed over a long time peri-

(Turn to page 36)

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Gerald McKune, Spring Green, Wis., who plans to keep 1,200 breeders from this year's 8,000 birds, says: "I wouldn't raise breeders without nf-180."

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nf-180 protective feeding works because nf-180 prevents and controls more turkey diseases than any other drug. It is effective against typhoid, pullorum, hexamitiasis, blackhead, paratyphoid, blue comb, quail disease, CRD (air sac complex), synovitis and paracolon. nf-180 keeps performance up through stress periods. It frees hens from constant disease drag. Reduces the chance of egg-transmitted disease.

Here, in tape-recorded interviews, is what users themselves say about nf-180 protective feeding:

Gerald McKune, Spring Green, Wisconsin

A 25-year veteran at raising turkeys, Gerald McKune keeps about 1,200 breeders every fall. He first tried nf-180 5 years ago. Today he feeds it at a continuous low level (50 grams furazolidone per ton of feed).

"I particularly like nf-180 for my breeders," says McKune, who also feeds nf-180 to his growing birds.

"I guess it's because there are more ways to see results with the breeders. I get better livability, and better hatchability. You get a sturdier poult, too. I definitely would not feed breeders without nf-180!"

Don and Jerry Wharton, Sacramento, Calif.

Don and Jerry Wharton, along with their father and brother Jack, operate the Sunshine Hatchery in Sacramento. Handling eggs from 35,000 breeder hens, they hatch about 1,300,000 poults a year.

"We first used nf-180 several years ago after 4 different poult deliveries broke with paracolon," the Whartons report. "nf-180 was so effective we've used it ever since. We give our breeder men the option of using the 'week-a-month' plan or 1 lb. of nf-180 per ton continuously.

"We've found nf-180 really helps as far as rotten eggs and blow-ups in the incubators go. I'll tell you ... we wouldn't be without nf-180. Compared to what a fellow could lose, the cost of nf-180 is nil."

Hatcherymen Don and Jerry Wharton recommend nf-180 to their breeder flock owners. They consider nf-180 "low-cost insurance."

Paul Bandel, Rochester, Minnesota

Paul Bandel has been in the turkey business for 31 years. In addition to growing out and dressing birds, he keeps 2,000 breeders every year.

"We start feeding nf-180 during the holding period, and continue all through the laying season," he says. "We feel assured of better hatches and better poults.

"We feel more relaxed if we're using nf-180. We have far fewer problems and worries. Of course, we still have some problems. In fact, sometimes we really do some sweatin', because even a 2,000-breeder hen flock takes a lot of money to run through. But with nf-180, you feel less helpless. You feel you can work things out.

"I'd hate to raise turkeys without nf-180. It takes care of a number of problems, not just one specific problem like some of the other drugs. *The only reason I spend money for nf-180 is that I think it makes me good money in return.*"

Paul Bandel has "far fewer problems and worries"... more hatching eggs and healthier poults... with nf-180 in his breeder mash.

Elwood Swanson, who feeds nf-180 to 12,000 to 16,000 breeders and 150,000 growing birds, says, "nf-180 works! Hatchability is tremendous."

Elwood Swanson, Turlock, California

Owner of the Westlock Turkey Breeding Farms, Elwood Swanson is in the turkey-breeding business in a big way. He sells eggs from 12,000 to 16,000 breeders a year in all areas of the U. S. and Canada.

"We're on a very rigid nf-180 program for our breeders," Swanson says. "We also start all our poults on nf-180 to avoid disease threats and stress problems."

Asked why, Swanson replied, "nf-180 works! It's as simple as that. Our hatchability has been tremendous. And on hatchery-run poults, our mortality is never over 3%. nf-180 is doing a real good job for us."

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od. The addition on April 1 was made so that the animals would have the vitamin in the diet several weeks before warm weather started in case an accommodation to the addition was needed. The addition on June 1 was made to test the effect of this treatment after the onset of warm weather. Shell thickness measurements on five day egg samples were made by group bimonthly between October, 1959, and April, 1960. During June, July and August, a five day egg sample was taken each month. Starting with the April sample, the eggs were collected by individual hen. Only those hens which had at least three eggs for each of the last four collections were used for the data shown in Table 4.

Egg production (Table 2) did not appear to be influenced by any of the treatments used in this study. These results substantiate those reported earlier by this department (Thornton and Moreng, 1958, 1959). The shell thickness data (Table 3) gave no indications that vitamin C had any influence on the improvement of shell quality. It did appear that the group given vitamin C in October had a poor shell quality in the late summer which was inferior to that of the controls.

In order to examine the data more closely all hens which had at least three eggs for each of the final four sampling periods were selected and the shell thickness value corrected as a percent of the April thickness value. This date was selected since no noticeable decline in shell thickness had occurred as yet. It appears rather evident that the group given vitamin C in October was at a disadvantage for maintenance of shell thickness during the summer months (Table 4). During each month the percent maintenance was highly significantly less than that shown by the control group. This cannot be attributed to egg production during this period since the two groups were somewhat comparable for the particular hens selected for this comparison. The average shell thickness values for these two groups were also highly comparable for the month of April, thus it would seem that inherent differences were not influential.

The mean values for the groups given vitamin C in April and June indicate that no positive response was received from this supplementation. These data were not analyzed statistically since the number of birds in each group were too few to warrant such calculations.

The detrimental response to vitamin C shown in this experiment indicates very clearly that more experiments need to be conducted before any recommendations can be made concerning its use. Since the experimental procedure was changed somewhat in the experiment reported here each change will require investigation. Prior to this study the birds before starting an experiment were always fed diets containing approximately 2.3% calcium. In this case a 3.0% calcium level was used throughout the study. Thus, more studies concerning calcium levels are needed.

Breed differences may also be a factor since the H and N chicken was used in this case while formerly S. C. White Leghorns were used. The question concerning time of vitamin C addition is not yet answered, since the April and June additions in the present experiment were not clear and may have been masked by a genetic effect. Among the factors which also need further study are the protein level and the amino acid balance.

The problem of thin shells is one that is dependent on many known factors which may increase or decrease its degree of severity. The evidence to date shows clearly that the condition is one resulting from a change in the metabolic state of the animal. The positive evidence which has been shown by this laboratory concerning supplementary vitamin C suggests that this vitamin is involved in this metabolic change. The negative results also indicate that the problem is a complex one and infers that many other metabolites may also be involved.

In summary, it is clear that the

(Turn to THIN SHELLS, page 69)

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THE FUTURE OF GRAIN BANKS

"If the elevators and feed mills continue to perform the grain bank service 10 or 25 years from now, it will be because they can do it cheaper than farmers. They are the logical agency to handle this service, and can be expected to meet this challenge."

By Dr. John W. Sharp
Agricultural Economist
Ohio State University

Grain banks have received considerable publicity in recent years in practically every corner of the U.S. where feed grain and animal production are important. It is a subject that has been discussed widely by elevator managers, farmers and trade groups, probably because its operation and development take so many different forms.

Everybody has a sure-fire method of handling the grain bank. Since practices are not standardized, there is a lack of understanding of grain bank operations which often results in adverse publicity. This, in turn, sometimes hampers its development.

Let's look back a few years and recall some of the events leading to the development of the grain bank as we know it today. I assume each of you understands the meaning of the term "grain bank."

The bank is chiefly a method of storing grain. It is an operation in which farmers deliver grain to a country elevator or feed store for storage of varying lengths of time, with the understanding that the grain eventually will be ground and mixed into a livestock feed and hauled back to the original farmer as feed. Generally, this operation entails the addition of supplements and other products by the elevator to make complete feed for the farmer.

As nearly as we can determine, grain banks have been in operation in various parts of Ohio for more than 35 years. The original suggestion or idea for the grain bank probably started with a farmer. This farmer may have delivered corn to an elevator for grinding and mixing and over-estimated the amount needed, resulting in a little surplus corn.

He probably didn't want to take the extra corn home and then bring it back again for later grinding, so he asked the elevator to store it until he needed the next batch of feed. Some of the older operators of elevators in Ohio make repeated references to this type of grain bank origin.

Grain Bank Functions

There really isn't any magic in grain bank operations. The name or term "grain bank" originated early in the 1950's, and it is not at all comparable to our financial banking operations. When we deposit money at a bank, we may receive interest from its use.

The grain bank differs in that when grain is deposited at the elevator, there is a cost involved and no return is realized from allowing somebody the custody of this grain for a period of time. This being the case, one wonders why the term "grain bank" was ever applied to such an operation.

Why was an operation of this type accepted in the first place? There must have been a basic need for the service to be performed. It probably saved somebody time or it saved somebody money. Thus, the grain bank has an economic excuse for its existence. Let's look at this point in further detail.

As we said before, the grain bank was probably originated by a farmer. He may have been closely connected with an elevator, maybe as part owner of an elevator corporation, in a family partnership, or as a member of the board of directors of a co-op.

This could have happened when the elevator was building additional storage and the position of the farmer made him aware of comparative costs of on- and off-farm storage. He probably found that costs per bushel of storage were lower in the larger tanks of the elevator than he could obtain with smaller farm storage bins. That made him wonder who could do the job cheaper.

Much of the farm-stored feed grain only occupies the farm storage space for a period of 3 to 5 months. This means a low occupancy use or a high cost per bushel for storing the grain on the farm. This situation, coupled with rising insurance rates, increasing rural taxes, and higher farm labor costs, encouraged a considerable shift of the storage function away from the farm. Thus, it is evident that the basic economic reason for the grain bank's existence is that grain can be stored more economically at the elevator than on the farm.

Volume Increases

The volume and extent of grain bank operations enjoyed only limited activity prior to the Korean War. The practice of off-farm storage increased quite rapidly after the Korean War, particularly in our area of the country. This increase was closely paralleled by the rapid development of larger feeding units in agricultural livestock production.

One could say that the growth of the grain bank was closely associated with the development of bulk feed service. This general interest in larger volume movements of grain at the farm level brought increased activity in grain banking operations.

The big difficulty resulted from the farmer's acceptance of off-farm storage far sooner than the associated agencies were able to provide the service in an economical and efficient manner. For example, much of the demand for grain bank operations in Ohio came before many of our elevators were equipped with grain dryers or aeration equipment which are essential facilities for reliable storage.

Participation of farmers in grain bank operations throughout Ohio gained significant magnitude only when these facilities were developed satisfactorily. Thus, in all fairness to the farmer-feeder we must admit that it was he who stimulated the development of the grain bank as we know it today. One would expect, therefore, that the farmer should enjoy the privileges of any innovational benefits derived from this new service.

Dr. John W. Sharp

AUTHOR—The accompanying article is from a talk that was presented by Dr. John W. Sharp, Ohio State University, Columbus, at the joint convention of the Illinois Feed Assn. and the Illinois Poultry & Hatchery Federation. Dr. Sharp is an agricultural economist at Ohio State.

List of Advantages

Why do farmers want this storage function performed off the farm?

1. The big reason, of course, is purely a matter of actual costs as we stated before. Total comparative storage costs favor the elevator. Purdue University's study gives the annual advantage to the elevator of slightly over 4¢ bu. on all grain bank activities. Higher farm storage costs resulted from larger initial construction cost and higher costs of maintenance on farm storage facilities.

2. Innovations and changes in harvesting methods for feed grains—especially harvesting at higher moisture content—have created greater risks of spoilage in storage.

3. Old cribs were constructed for low-moisture grain. Major alterations are needed to adapt them to high moisture grain. In most cases, this means planning new facilities, which are expensive.

4. As I pointed out earlier, tax rates on farms are increasing, particularly with many consolidated school developments.

5. Insurance rates on farm buildings are continually increasing.

6. Labor and other variable costs of storage are less at elevators than at farms.

7. One handling operation is eliminated with grain stored at the grain bank. Time can be saved if there is no waiting at the elevator.

Two of these reasons involve new harvesting methods which increase the risks of farm storage. For example, the change from the shredder to the picker resulted in cribbing corn of higher moisture content. The change from the picker to picker-sheller outdated entire farm storage operations. With the advent of high-moisture harvesting, artificial drying of corn is now a necessity. Shelled corn storage facilities are more expensive than ear corn storage facilities, and it is far more risky to store shelled corn than ear corn. There are many other reasons for the grain and feed banks from the farmer's point of view.

As the elevators grasped this idea from the farmer-feeders and developed a program to fit their operations, the functions of grain and feed banks became lost in a group or package of services. The package deal contained many items that proved undesirable. As a result, elevator operators have been searching for the right type of operation that would be suitable to both parties and still offer the needed services.

Farmers have enjoyed a more rapid pace of technological development in grain and feed handling than has been enjoyed at the elevator. This is particularly true in Ohio, and I assume that it is also the case in Illinois. With larger animal feeding

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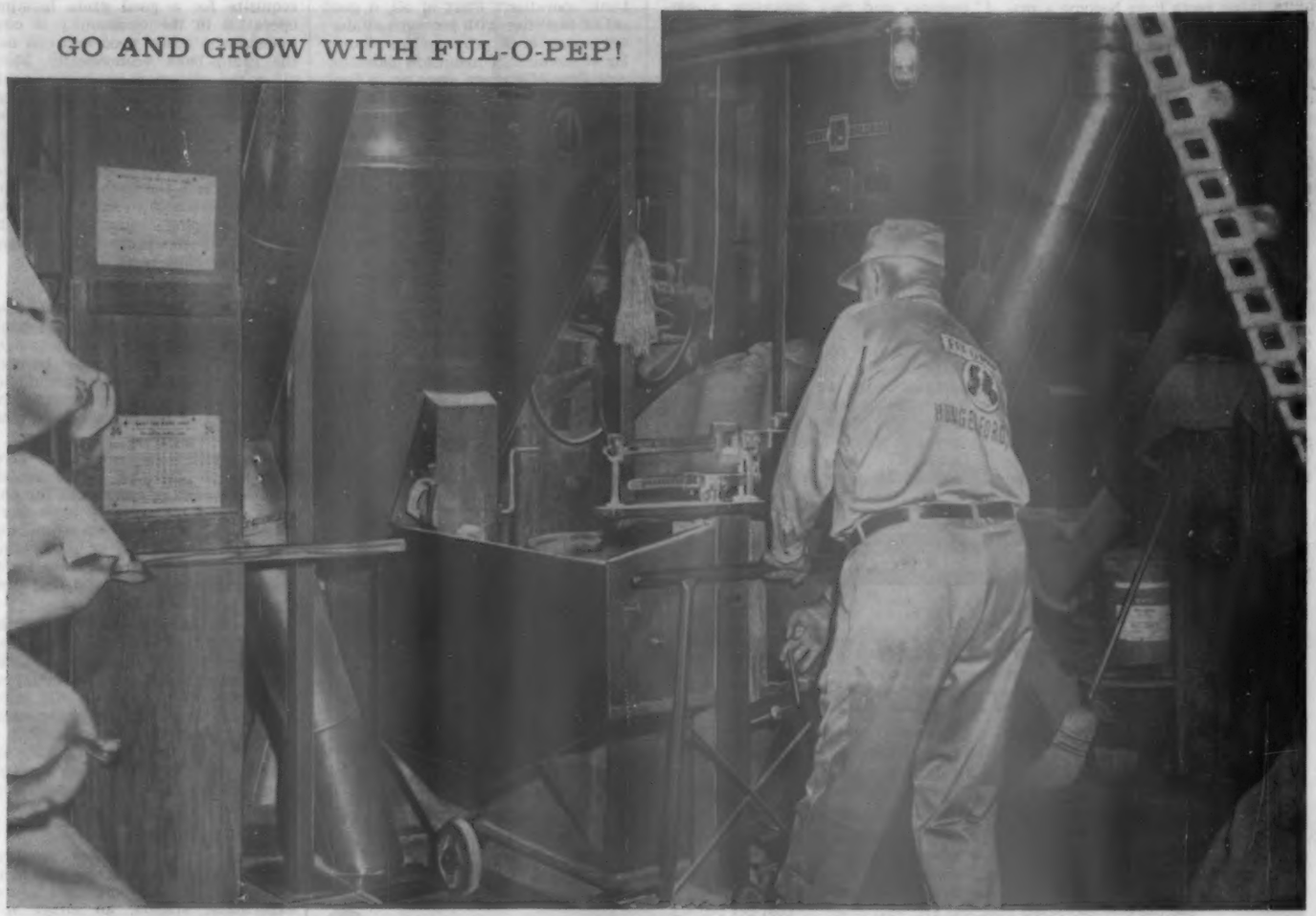

This new mixer is one of two installed about 1 year ago to replace older equipment. The Andersons feel this is a transitional period for the feed business... and grind-mixing and bulk service is essential to keep them out in front. "We've been with Ful-O-Pep for 17 years," said Mr. J. K. Anderson. "We know, and our customers know, we can depend on Ful-O-Pep Concentrates for result-getting feed."

"Our sales jumped 25%

...with Ful-O-Pep backing in bulk and grind-mixing!"

— says Richard Anderson, Anderson Feed Co., Hungerford, Pa.

"Our farmers today need bulk handling and local grind-mixing to keep costs in line," says Richard Anderson of the Anderson Feed Co., Hungerford, Pa. "We needed bulk and grind-mixing to grow... and Ful-O-Pep's aggressive leadership in this field is proving a real key to sound growth for us."

The Andersons installed bulk equipment a little over a year ago. They also modernized their mixing equipment. Today, their total tonnage is up about 25% ... customers like the money they save... and keep coming back for more!

GO AND GROW WITH FUL-O-PEP! *For information on Ful-O-Pep's 5-Point Bulk and Grind-Mix Program, write: Feed Sales Division, The Quaker Oats Company, Merchandise Mart, Chicago 54, Illinois.*

Anderson's modern plant includes six 15-ton bins for holding Ful-O-Pep Concentrates and Ful-O-Pep feeds. They are adding additional storage for grain and bulk feed. Ful-O-Pep engineers helped develop plans.

"Bulk business is growing fast," says Richard Anderson, manager. "We believe 75% of our tonnage soon will be bulk." When the Andersons deliver feed, they often pick up a load of grain to store in their "rotating" grain bank.

Advertising and merchandising is important, the Andersons believe. They take full advantage of Ful-O-Pep's extensive program for dealers. They also maintain roadside shelters, with Ful-O-Pep advertising on them, for use by school children.

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units, labor costs have become a primary interest to farmer-feeders.

The trend toward bulk feed which seems to be part of the grain bank package has required significant facility changes in their feeding operations. Different types of facilities are needed at both points. Delivery procedure must be adjusted since less feed inventory is maintained at the farm. Feed delivery service may mean filling farm feeders every three days.

"Feed My Hogs"

A certain elevator operator in north central Ohio who operated a grain bank had a farmer walk into his elevator one day early in January to notify him that he was going to Florida. The elevator operator, aware of the farmer's 120 head of hogs, asked him who was going to feed his hogs while he was gone.

The farmer retorted with the dogmatic statement, "You are!" The elevator operator informed the farmer that he wasn't in the hog feeding business and that operating a successful elevator required his entire attention. The farmer politely but firmly told him that if he didn't feed the hogs his competitor down the road would. The elevator manager later informed me that he was in the hog feeding business.

One of the big difficulties in the initial development of the grain bank at Ohio elevators was that its growth in the early 1950's followed the band wagon approach. Like many new things, it was forced into existence by competition.

Initial operations started without any planning or any forethought. The grain bank assumed the identity of a service more or less tacked onto other elevator operations. As I pointed out earlier, most of the facilities in Ohio were not adapted to grain banks. In addition to a shortage of drying and conditioning equipment, they just didn't have proper storage facilities.

What is needed for a good grain bank operation? First of all, a good set of facilities with economical storage space is of primary importance. By economical, I mean low-handling-cost type of storage since grain bank accounts generally result in a fast turnover in inventory.

Also very important is good conditioning equipment, including drying, fast grinding and large mixing units. It is highly recommended that bulk feed equipment be installed.

These facilities must be planned for the grain bank operation and not tacked on in such a manner that they rob the basic function for which the elevator or feed mill was originally organized. In short, the grain bank should not be formed at the expense of grain merchandising. However, if an elevator has excess storage space available—in other words, a low occupancy rate—expanding the grain bank operation could lower the unit fixed costs for all grain handled by the elevator.

Of course, the most important requisite for a good grain banking operation in the community is customers who really need and can use the grain bank economically. Most often, the customers are hog or poultry farmers. Only limited use of the grain bank can be made by beef and dairy farmers. It is difficult for the beef or dairy cattle producers to use the grain bank because their rations generally call for corn cobs. Some elevators are able to solve this problem by keeping a supply of cobs in order to reconstitute shelled corn to the ear corn basis.

Records Important

Another important requisite for the operation of a good grain bank is efficient, accurate and up-to-date records. These records must be simplified for ease of understanding by both parties since they provide the only means of keeping track of individual inventories.

Still another requisite for a good grain bank operation is the knowledge of operating costs from the elevator operator's point of view since his charges for the service must reflect the actual costs of performing this service. A final requisite for a good grain bank is a good feed program by the elevator.

A grain bank is merely a facilitating function of an over-all feed program for the farmers. If the modern farmer has a good feeding program, he most certainly will need feed grain storage. If the modern elevator or feed store operator has a good feed program, he, too, will certainly need good feed grain storage. Thus, the needs of the two are closely parallel.

Operations Studied

When we first initiated our research project on grain and feed bank operations at the Ohio agricultural experiment station, an effort was made to determine the variations in present operations. We are studying the operations of 45 elevators with grain bank programs in Ohio. All of these elevators have bulk feed.

The majority of the grain in the grain bank is received in July, October, November and December, with November being the largest month. The duration of this storage is approximately 3½ months. The average amount of grain stored per elevator for the 1959 period was slightly over 101,000 bu. All 45 elevators had the grain bank as part of their overall program. A total of 82.2% of the finished feed delivered to the farmer was in bulk form. Two-thirds of the deliveries ranged between one and three tons; 22% was between three and five tons, and 10% was over five tons. The remainder was under one ton.

The method of levying costs for the grain bank was indefinite and inconsistent. Some elevators gave free storage; very few had a direct monthly storage charge per bushel. Some had a shelling charge; others had a drying or conditioning charge; others maintained various shrinkage schedules. It is interesting to note that one of the important reasons given by the 45 elevators against levying outright storage charges was the farmers' ob-

(Turn to page 44)

New Butler Stor-O-Matic tank

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Profitable for everyone, the grain bank idea is sweeping the country. Feeders save the time-consuming job of mixing feeds . . . the cost of installing mixing facilities. Feed merchandisers are assured a steady volume of mixing and concentrate business and can meet the competition of on-farm mixing.

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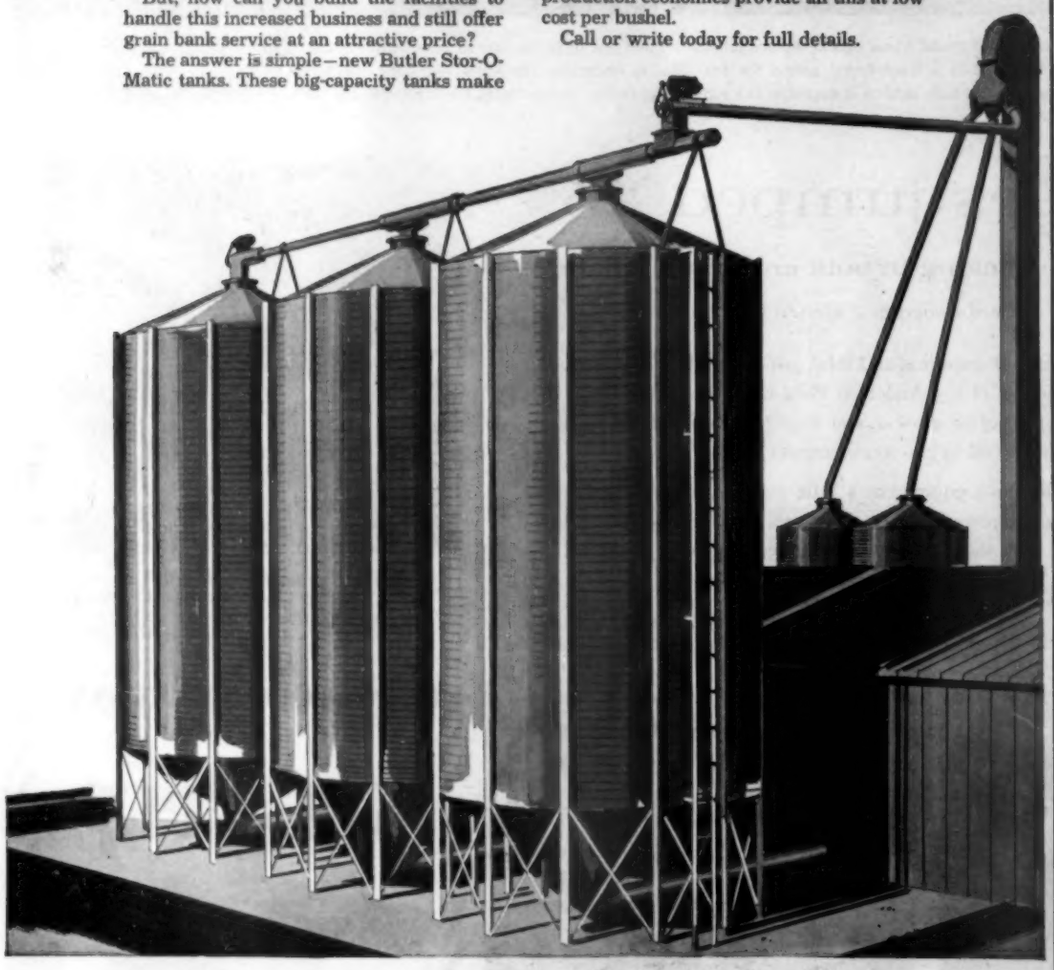

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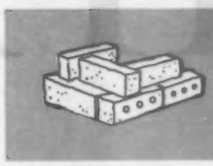
The VIT-A-WAY PROGRAM can help you build a More Successful Feed Business!

A Complete Program to BUILD *Better* FEEDS... AND BIGGER SALES VOLUME!

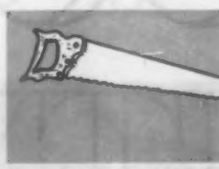


FIRST

We'll lay the foundation with VIT-A-WAY Mineral-Vitamin FORTIFIER as the base fortification for your feeds. This is a solid foundation upon which a steady growing—successful feed sales program can be built.

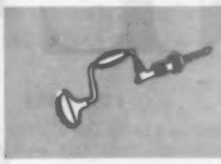
SECOND

We'll hammer out feed formulas for you that are confidential. Your formulas will be made using locally and easily available ingredients . . . and, they will be uniform and result-producing at the lowest possible cost to manufacture. Your formulas will be prepared by some of the nations best nutritionists, who are on the VIT-A-WAY Staff.



THIRD

We'll saw off many problems, through Nutrition Counsel—Our Department of Research and Control is always ready to answer questions and furnish data on "tomorrow's problems today" . . . to help you meet and solve feed problems in your trade area. This puts you in a better position to serve your customers with new developments in scientific and efficient feeding practices.



FOURTH

We'll help you drill a hole through competition by assisting you in advertising and promoting your own brand feeds. Our Advertising Department will help you "create" new business with sales literature, feeding direction folders, ad mats, point-of-sale pieces, direct mail and other selling tools.

FIFTH

We'll help smooth off customer objections by sending free mailings to them . . . for you. These mailings will go right into the home of the customer and prospect . . . with YOUR NAME imprinted on them. This invites them to visit and trade with you . . . and further explain the value of VIT-A-WAY in your feeds.

SIXTH

The VIT-A-WAY Program will paint a prettier profit-picture for your sales effort. We will assist you in holding feeder meetings and help train your salesmen so they will all know the value of selling and using your VIT-A-WAY Fortified feeds. It all adds up to a service that will help you have more successful feed business.

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UNIQUE CHEMI STRUCTU ...NEW TYPE OF ANTICOCCI ACTIVITY

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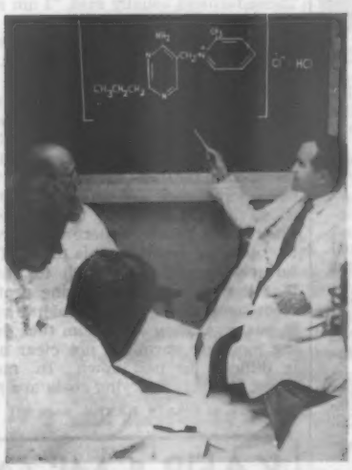

NOW...FROM THE LEADER IN COCCIDIOSIS RESEARCH

Carefully selected from a massive screening program involving thousands of compounds, AMPROL combines a highly desirable balance of efficacy and safety. It shows promise of being a truly effective coccidiostat for use in broiler feeds. This latest addition to the Merck family of coccidiostats is really new and has undergone intensive study and testing, using the most advanced methods. It is the first coccidiostat evaluated against seven species of chicken coccidia.

UNIQUE ANTICOCCIDIAL ACTION

The chemical structure of AMPROL differs completely from that of any other coccidiostat—it is similar to that of thiamine. At recommended use levels, AMPROL appears to interfere with the thiamine metabolism of the coccidia, but does not affect the normal thiamine metabolism of the chicken. This mode of action is entirely different from that of any other coccidiostat in the industry's history.

SIGNIFICANT COMMERCIAL ADVANTAGES

The value of AMPROL can be measured by its efficacy and its favorable margin of safety . . . plus the fact that it permits attractive weight gains and feed conversions. What's more important, tests to date have not shown any significant ability of coccidia to develop resistance to this compound—an indication of a most promising role for AMPROL—in the management of coccidiosis—for years to come.

EFFICACY

AMPROL exhibits important activity against the most significant coccidia—especially *Eimeria tenella* and *E. necatrix*. Carefully checked against *44 strains of seven coccidial species*, AMPROL has demonstrated a favorable pattern of performance under a variety of conditions.

And in laboratory comparisons with *mixed* infections of cecal and intestinal coccidiosis (*E. tenella*, *E. necatrix*, *E. acervulina* and *E. maxima*), AMPROL *gave more protection than other coccidiostats.*

PRODUCTION PERFORMANCE

AMPROL has permitted excellent growth and feed efficiency. Results of a year of experiments under practical, commercial-type conditions have substantiated the laboratory findings.

Compared with controls, broilers on AMPROL showed higher final weights, with favorable feed conversions.

CONSISTENT PERFORMANCE

In the tests, birds were exposed to four consecutive generations of ten virulent strains of *E. tenella*. This "killer" coccidial species did not develop significant resistance to AMPROL. Based on these and subsequent tests, it is anticipated that AMPROL will give consistently good protection under most field conditions.

SAFETY

AMPROL is well tolerated up to four times its suggested use level of 0.0125%. Side effects noted above a 0.05% level are specifically related to thiamine-depletion, and are quickly reversible by giving thiamine. This simple corrective procedure is unique with AMPROL.

Layer and breeder feeding trials indicate that recommended use levels of AMPROL will not affect egg quality, egg production or hatchability.

No toxicity is observed when feeds containing AMPROL are fed to cattle, sheep, swine and dogs.

USE LEVELS

The recommended use level for most field conditions is 0.0125%; where adverse conditions and less sensitive strains of coccidia prevail, the 0.025% level should be employed.

FURTHER INFORMATION

Reference data on the use of AMPROL in broiler feeds are available in a technical service bulletin.

For more details, or to place your initial order, contact your Merck representative or write to Agricultural Products, Merck Chemical Division, Merck & Co., Inc., Rahway, N. J.

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jections to receiving bills for their "banked grain" in storage.

Drying

Generally, corn was dried to between 13.5 and 15.5% moisture, oats to 13.5% moisture. In most cases, the drying or conditioning cost is a charge of money value rather than a weight deduction charge. A typical drying and shrinking charge would be as follows: When 17% corn was shrunk to 15.5%, 1.8% would be deducted from the original weight to arrive at the net amount credited to storage.

Normally, if the corn is less than 17% moisture, no charges are made. If it is over 17% moisture, a charge of ½¢ per bushel for each ½% change in moisture would be levied to reduce corn to 15.5%.

Those elevators not having a shrinkage, drying, or storage rate per bushel usually have a shelling charge of 5¢ per hundred pounds or bushel in some cases. Many of the charges and methods of figuring shrinkage, shelling, drying, conditioning and storing costs would take a Philadelphia lawyer to interpret.

Practically all elevators have in common an assessment or charge for grain bank grain that is merchandised by the farmer. The charge is normally from 1 to 1.5¢ per bushel per month retroactive to the time it was delivered for storage.

In the earlier stages of development, many elevators limited the volume of grain that could be stored under the grain bank by an individual farmer. After several years of operation, the elevator and farmer had worked out a storage program to meet the demands of each feeder.

Since the average storage duration of grain in the bank at these elevators is about 3½ months, a normal operation will result in a rapid turnover of inventory of feed grain storage. When a charge of 1¢ per bushel per month is made for grain bank storage, the elevator will receive 3½¢ per bushel return.

For the average of 101,000 bu. moving through Ohio grain bank elevators, an average of approximately 25,000 bu. of space was used.

The income of $3,500 from grain bank storage for the average elevator must be allocated as income on the 25,000 bu. of space used by the elevator for that function, or a return of 14¢ per bushel per year for the space. This income includes handling and is certainly not out of line.

When we made comparisons of the net profit position of the 45 feed mills and elevators in our Ohio sample with full-fledged grain bank operations as compared to the period prior to these operations, a conclusion could be drawn that the grain bank had not been a raging financial success for them.

After several years of operating grain banks, many Ohio elevator operators felt that the farmer had done considerable thinking and planning in shifting the responsibility of this costly function of feed grain storage off the farm.

Farmers' Objections

In addition to elevators, we contacted farmer-feeders to obtain their points of view on the present grain bank operations in Ohio. We found many complaints and objections to present grain bank operations. Some of these objections were:

1. Not being able to have cobs ground in cattle feed. Although some of the elevators have cob bins which provide a ready supply of cobs, farmers complained that often dust and screenings were also conveyed to these bins, thus adulterating the cobs.

2. Discounts are too great. Too many of the elevators based their discounts on the market price of corn and not on the actual weight basis. These farmers usually said, "I am not selling anything so I don't want to talk in terms of selling a product; I want to talk in terms of weights."

3. Drying costs are excessive.

4. Feed bank costs are not clearly broken down. Several farmers indicated an interest in grain banks because storage is too expensive on the farm. Yet, the fact that the elevator will sometimes store grain free doesn't make sense to the farmers. They often wonder where the elevator operator is getting his profit. The farmers are smart enough to know that the operator is receiving profits from some source or he couldn't stay in business. They also claim that drying moisture shrink is not clear and is difficult to nail down. In most cases, the actual drying costs are not

(Turn to GRAIN BANKS, page 62)

BIG and/or **TALL**
TANKS
MASTER-CRAFTED BY COLUMBIAN
● Quickly Expand Storage Capacity
● Low in Cost
● Fast, Easy to Erect

This Columbian BIG BIN—36' x 24', maximum 21,950 bu. capacity, was erected for Kansas Grain Co., LeRoy, Kansas, **in one day** by Columbian contractor Dana Clark Equipment Co. of Wichita, Kansas. Another Columbian BIG BIN like this was erected at the opposite side of the old country elevator, greatly expanding capacity in a matter of days.

EXPANDING STORAGE CAPACITY is quick, easy and economical when Columbian BIG BINS and TALL TANKS are specified.

Pictured is a modernized and greatly expanded country elevator at Willmar, Minn., which utilized five 27' x 40' Columbian TALL TANKS plus a Columbian BIG BIN (right foreground) to quickly and extensively increase storage capacity to meet current needs.

Why Columbian? Columbian BIG BINS and TALL TANKS are precision-fabricated—*"Master-Crafted"*—by Columbian from corrugated steel. They're favorites with contractors and workmen who erect them because they "fit up" so well. Putting up a Columbian tank or bin is fast and easy... precision-fabrication means all parts fit, all bolt holes are true and clean and are just where they are supposed to be. With Columbian sealing strips and steel backed Neoprene washers, not only does the Columbian go up quickly but it is tight to provide efficient use of aeration equipment and fumigants. Columbian BIG BINS and TALL TANKS give you fire-safe, weather- and vermin-proof protection. Low erection cost and the satisfaction of having adequate tight, safe storage quickly are plus factors of importance to you. Columbian BIG BINS may be loaded with existing equipment. TALL TANKS usually require installed loading equipment.

What do you need? Columbian makes every size grain storage bin from 500 bu. to 35,540 bu. capacity! Write today for full details... Ask for illustrated folders on Columbian AAA Red Top Bins, BIG BINS, TALL TANKS.

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STEEL, Master-Crafted by Columbian... First for Lasting Strength
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Morton Williams (left) and James Pierce have built their business on service to farmers.

"Farm service built our 'feed store' into thriving Purina Service Center"

—*say James Pierce and Morton Williams, of Pierce & Williams, Hopkinsville, Kentucky*

With a small store and the Purina Franchise, Pierce & Williams began *serving* farmers of Christian County, Kentucky, twenty-one years ago. The service helped farmers grow and, in appreciation, they helped Pierce & Williams grow. The small store that sold complete Purina Chows has grown into a Purina Service Center consisting of a large salesroom, two Check-R-Mix mills, a grain bank and equipment for handling bulk feeds.

In serving the area's agriculture, Pierce & Williams holds many meetings to take Purina Research developments to farm folks. The Dealership has introduced "Pig Parlors" and caged hens to Christian County agriculture and has promoted creep feeding and year-round farrowing.

Through the years, Pierce & Williams expansion always has been in the direction of giving better service. As a result, the firm can take credit for adding many thousands of dollars to the annual income of the area's agriculture.

* * * *

Purina Salesman Ira Fears has been a key factor in the growth of Pierce & Williams. He has been so helpful to the organization that he is described as "practically one of the firm . . . a good 'partner.'" Salesman Fears helps with feeder meetings . . . on-the-farm selling . . . employee training . . . business management. He helped lay out the two Check-R-Mix mills operated by the firm.

Bulk delivery of Purina Chows saves both time and money for stockmen and poultry growers. Here we see Joe Earl Alder getting ready to start into the country.

Purina training, given to all employees of Pierce & Williams, has proved helpful to bookkeeper Stella Cornelius and to Calvin Guess, who is an in-the-store and on-the-farm salesman for the Hopkinsville Purina Service Center.

PURINA . . . YOUR PARTNER IN SERVING ANIMAL AGRICULTURE

Nebraska Company Designs New Mill for Production Efficiency, Plus Feed Quality Control

Manufacturing efficiency, plus quality and contamination-free production —these are some of the things which officials of The O. A. Cooper Co. sought in planning their new feed mill at Cozad, Neb., and these are features which they feel they will have when the plant is completed the latter part of January.

The modern new push-button plant will be the third feed mill of the Cooper company, which is headquartered at Humboldt, Neb. Other mills are at Humboldt and Beatrice, Neb.

A complete line of livestock and poultry feeds will be produced at the Cozad plant, which is located in a major livestock area. The initial pelleting capacity will be 100 tons per eight-hour day, with space allowed to double this capacity in the future.

High production and low cost operation were important points in designing the new mill, explained C. P. Hunzeker, vice president in charge of production for the Cooper firm. But, in addition, he said, quality and the use of many additives in today's feeds were given special consideration in materials handling and other aspects of the operation. As a result, gravity is used extensively in the flow, there is a minimum of conveying and elevations, and prevention of additive contamination was kept in mind in deciding upon materials handling equipment.

An interesting part of Cooper's new mill project at Cozad is the cooperation of the local community. The Cozad Industrial Development Corp. was a major factor in the decision of the firm to locate in this Platte Valley community. In addition, some 100 persons in the area purchased Cooper company stock in an amount totaling more than $50,000.

Guy L. Cooper, company president, said the new mill at Cozad is being built because demand for the firm's feeds has grown beyond present production capacity. He called the new project, to serve central and western Nebraska farmers, one of the most important ventures undertaken by the company in its 80 years of existence.

H. K. Seits, vice president in charge of sales, said that the new mill will be a very important factor in Cooper's sales program.

Survey Made

"The need for a plant located in a rich area which would afford a favorable competitive situation in regard to service and delivery cost, along with a market potential, prompted a detailed survey of the Platte Valley area," explained Mr. Seits.

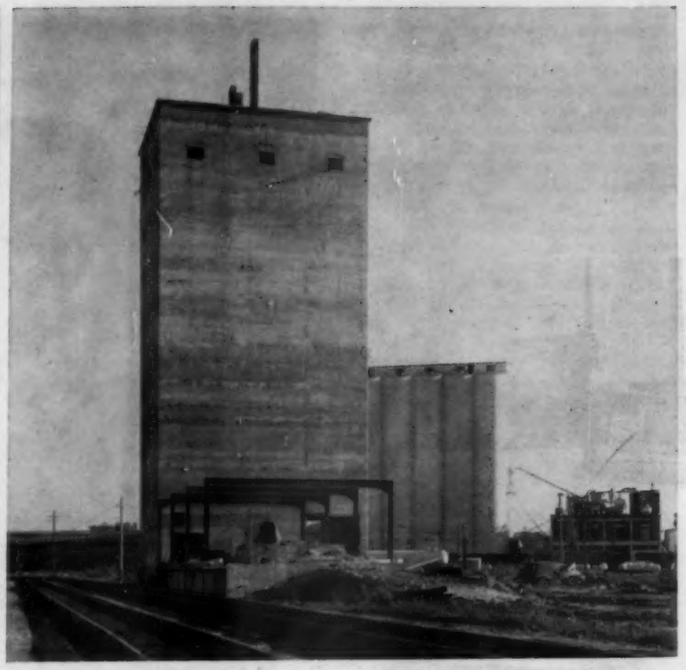
Charles H. Johnson, secretary of the company, conducted a survey of the Platte Valley area which, along with other factors, guided the Cooper management to its decision of choosing Cozad as the site of its new mill, which is being erected by a Kansas City firm, Combs & Co.

Mr. Johnson's survey included comparisons of several locations regarding: Population, animal population, labor, housing; power rates, taxes, community traits, financial aid, sites available, shipping, distances from key locations affecting the present organization and potential new business to be gained.

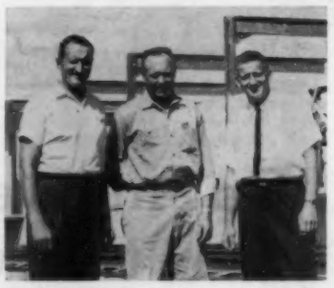
Plant Personnel

Joseph F. Genoa, a newly elected vice president and formerly secretary of the Cooper organization, has been placed in charge of Cozad operations. Plant superintendent is LaVerne Ostendorf, a former vocational agriculture teacher. Mr. Ostendorf was hired for the new post before ground was

PELLET MILL—LaVerne Ostendorf (left), plant superintendent, and Joseph F. Genoa, Cozad manager, are shown beside a 100 h.p. California pellet mill which is being installed. Space has been set aside for installation of a second pellet mill.

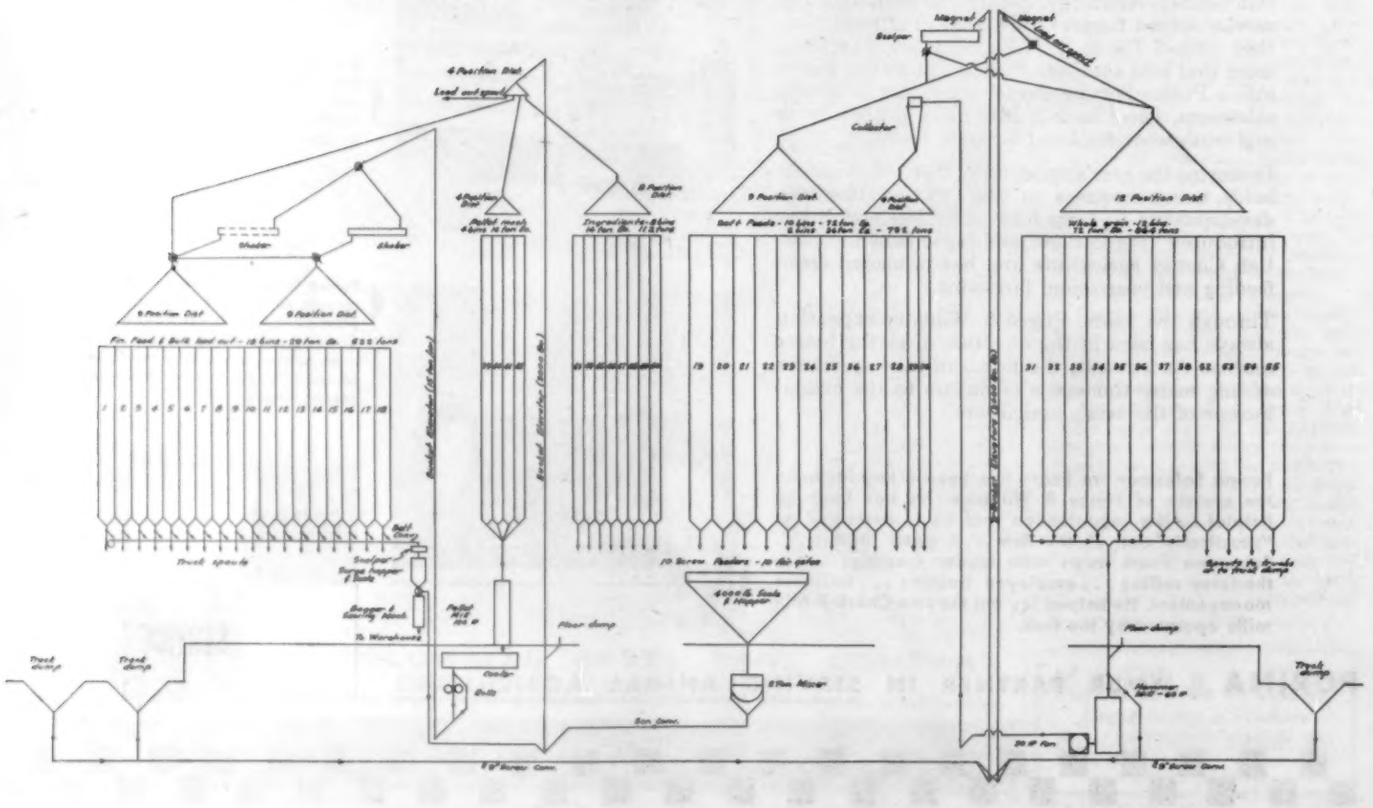


NEW PLANT—Scheduled for completion in January, the new mill pictured under construction will be the third feed plant operated by The O. A. Cooper Co. Other mills are at Humboldt and Beatrice, Neb. Steel beams in foreground are for warehouse. Also note new rail siding.



PLANT PERSONNEL—Shown here are, left to right: Rudy Tomek, resident salesman for the new Cooper feed plant at Cozad, Neb.; LaVerne Ostendorf, superintendent, and Joseph F. Genoa, manager.

Flow Diagram of New Mill Being Built at Cozad, Neb., by The O. A. Cooper Co.



LOOKING THINGS OVER—While concrete is poured from truck (right), progress in construction of new feed mill at Cozad, Neb., is watched by (from left): Joseph F. Genoa, plant manager; Jack Combs, Combs & Co., Kansas City contractor, and C. P. Hunzeker, Cooper vice president for production.

broken for construction of the mill and has been under an intensive training program at other Cooper mills. Other personnel required for operation of the new mill will be secured from the Cozad area.

The mill—of slip-form concrete construction with concrete bins—is located on a 17-acre site at Cozad. It will be amply served by railroads and highways.

In working out the design of the plant, Mr. Hunzeker spent many months visiting other mills and checking with engineers and others. A primary consideration, in addition to efficiency, he said, was quality and contamination-free production.

"The many special additives used in modern feeds were given major consideration in deciding upon materials handling equipment," he pointed out. "Dracon conveyors are used throughout. A horizontal cooler was used to save space and eliminate one elevation. There are only three elevations in the flow of materials."

The new mill will be a push-button batch operation. The control system has automatic adjustable mixing and discharge timing and automatic printing of dial reading for each ingredient.

Material Flow

Mr. Genoa provided the following description of material flow which will exist when the new mill is completed and in operation (see flow diagram):

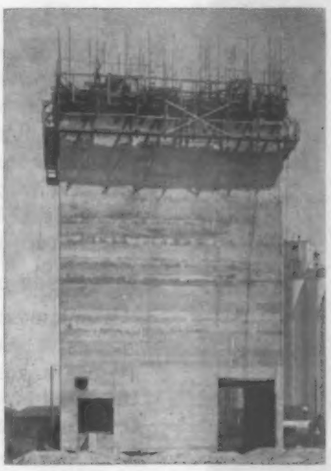
Two cars of incoming ingredients can be spotted at once, but only one car at a time can be unloaded. Cars on the track farthest from the feed mill are to be hopper cars only for unloading by under-track conveyor. Cars on the near track may be hopper cars or box cars unloaded by means of a power shovel.

At the same time a rail car is being unloaded, material may be received by truck through the dump-pit located in the mill driveway (a truck may be loaded with bulk finished feed at the same time).

Material received by rail or trucks will be moved by Dracon type conveyors to either of two 3,000-bu.-per-hour bucket elevators (Combs), elevated to the top of the mill and conveyed by gravity as follows:

Whole grain will pass through a 12-position distributor to one of the 12 grain bins (Nos. 31-38 and 52-55, see flow chart). A bypass is provided on the whole grain receiving leg discharge, permitting soft feeds to be spouted through a nine-place distributor to any one of the nine soft feed bins (Nos. 19-27). The whole grain leg also provides for spouting to the bulk load-out spout.

Soft stock is elevated to the top of the mill and conveyed by gravity over



DURING CONSTRUCTION — This photo shows progress of slip-form concrete construction during erection of new mill at Cozad, Neb., by The O. A. Cooper Co., headquartered at Humboldt, Neb.

DEVELOPMENT GROUP—Officers of the Cozad (Neb.) Industrial Development Corp., which played a significant part in the decision which resulted in the building of a new feed mill in their town, include, from left: Hoyt Griffen, president; Neal Young, vice president, and Bill Young, secretary. At right is Wayman May, a member of the community group.

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Versatile Floor-Mounted
SINGLE SECTION SIFTER

A machine that is ideal as a scalper, dry mash finisher, grain cleaner and feed dresser. Has capacity to handle the big jobs—but requires little power. Single unit machine with sifter base and motor mounted as a compact unit. Uses standard type sieves for easy, quick change of flow.

Write for information, specifications and prices on all Nor-Vell products. We will custom build to suit your requirements.

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FORT SCOTT, KANSAS
The Name That Means Better Sifting

Superior milk producer

Nutritionists recognize corn gluten feed as a superior milk producer. Buffalo Brand has been a standard in the feed industry for more than 60 years. To get top milk production, make sure your dairy rations include Buffalo Brand Corn Gluten Feed.

BUFFALO®
CORN GLUTEN FEED

CORN PRODUCTS DIVISION
CORN PRODUCTS SALES COMPANY

ELECTRICAL CONTROL ROOM—LaVerne Ostendorf, superintendent of feed plant being built at Cozad, Neb., stands inside the mill's dust-tight electrical control room.

a receiving scalper. It spouts either to the 12th position whole grain distributor bins (Nos. 31-38 and Nos. 52-55) or spouts to the ninth position soft stock distributor into designated bins (Nos. 19-28).

Small ingredients (premixes, Pelbrite, salt, calcium, etc.) which are normally received in bags in the warehouse portion may be dumped on the first floor of the mill in the mash feed bucket elevator and elevated into any one of eight small ingredient bins (Nos. 43-50). Premixes will be supplied from Humboldt.

Whole grains or special ingredients (bins 31-38) are spouted into the 75-h.p. Jay Bee hammermill, and the ground material is elevated by means of a separate 30 h.p. fan to the collector located at the top of the mill. The ground material is spouted through a four-place distributor into any one of the bins numbered 27-30. A floor dump is also provided for dumping bag material directly into the hammer mill.

Batching and Mixing

Materials stored in the eight small ingredient bins or in the 12 soft stock bins are conveyed to the hopper scale (Combs) as required in the following operation: Ten of the bins will have air-operated slide gates and ten of the bins will have live bottoms with screw feeders operated by push-buttons, all discharging into the 4,000-lb. scale hopper and controlled by means of a momentary push-button in the control console (Combs).

Located directly in front of the operator will be the 5,000-lb. (5 lb. graduation) scale dial with electric printer. As each ingredient is received in the scale hopper, the weights shown on the dial will be automatically printed on a tape except that the weight of the first ingredient will not be printed until the operator presses the button to weigh in the second ingredient, and the last ingredient weighed will be printed when the operator presses the print button allowing him to discharge the scale.

The scale is discharged, by means of a selector switch, directly into the mixer. If the mixer discharge gate is open or if the last batch discharged into the mixer has not been dumped from the mixer, the scale hopper will not open.

If any errors, either over- or underweight on ingredients, occur when the operator is setting up a batch of feed, the scale hopper will automatically lock into position and will not be able to discharge until the plant superintendent or other authorized person is notified of the error. The plant superintendent can then determine what is to be done with the particular batch, and with lock and key discharge the ingredients.

When the scale hopper gate is open, the screw feeders and air-operated gates above the scale are locked out and cannot be operated. The instant the scale dumps into the mixer, a timer, which is adjustable in 1-minute depths to 15 minutes, immediately starts operating. At the end of the time set, the mixer gate automatically opens and remains open by means of another adjustable timer long enough to discharge the mixer into the mixer surge hopper.

The mixer surge hopper, which has a live bottom conveyor, is designed to receive the contents of the 4,000-lb. horizontal mixer in approximately 20-30 seconds. The live bottom conveyor moves material from the surge hopper at a uniform rate to a mash feed bucket elevator, which elevates material to the top of the mill where it is conveyed by gravity through a four-place distributor. From there the material can go to the load-out spout, to the eight-position distributor over the small ingredient bins (Nos. 43-50), through a four-position distributor into the four pellet mash bins (Nos. 39-42) or through a 9-position distributor to bulk load-out bins (Nos. 1-9).

Pelleting

Provision is made for two 100 h.p. pellet mills but only one pellet mill is to be installed initially. This will be a 100 h.p. California dual-speed pellet mill discharging directly into a California horizontal pellet cooler, which, in turn, discharges either directly into a 15-ton-per-hour bucket elevator or through a California roll into the bucket elevator.

Pellets will then be elevated to the top of the mill and conveyed by gravity over California 60 by 72 Snappy Shaker, into either of two 9-position distributors. Provision is made for a second shaker to be installed in the future.

Fines from the shaker and from the cooler collector are returned by gravity either directly into the pellet mill or through a by-pass valve to a sacking spout. The overs from the shaker when the pellets are being ground over the rolls are returned directly to the rolls. When molasses pellets are run, dusting material is discharged through a small feeder directly into discharge casing of the pellet mill.

Bulk Loading, Bagging

Finished feed and bulk load-out bins (Nos. 1-18) are located above the driveway and arranged so that they may discharge by gravity directly into trucks, which are immediately weighed on a 60 by 10 Fairbanks-Morse scale equipped with dial imprinter, or by means of a by-pass

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Complete accuracy in Molasses mixing bag after bag! One mixer For All Your Mixing Needs. Mixes Bo' ı Dry and Molasses Feed.

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LET RESULTS DECIDE WHICH GROWTH STIMULANT YOU SHOULD USE...

HOW SHOULD YOU EVALUATE THE COST OF A GROWTH STIMULANT: BY INITIAL COST, OR BY RESULTS?

When a growth stimulant increases weight in *marketable* birds so that the improvement is worth many times the initial cost of the growth stimulant, it's obviously a good investment. And when that same growth stimulant additionally produces a significant increase in feed conversion efficiency, then it's an even better investment! GALLIMYCIN-10 is just such a growth stimulant!

Increases profits in 3 ways

The low-level effectiveness of GALLIMYCIN-10 ... greater marketable weight produced ... plus savings in feed ... all add up to bigger profits. Increased profits from feeds supplemented with GALLIMYCIN-10 have ranged from $29 to $46 per 1,000 birds ... added profits *above* feed and feed additive costs!

6011570

valve into a Combs belt conveyor to a surge hopper discharging directly into a scalper, which in turn discharges directly into a Richardson scale equipped with a belt feeder and air-operated bag holder. This last system is arranged so that the operator of the scale automatically controls the flow of material over the belt conveyor and through the scalper. Portable, flexible spouts are furnished to load trucks.

Filled bags drop directly onto a belt conveyor which is synchronized with a Union Special sewing head which is automatically operated. From the sewing machine conveyor belt, bags are conveyed by means of a slider belt conveyor the length of the warehouse located on the car side in a position that bags may be discharged by means of a portable chute directly into a box car spotted at one of the three positions or into the warehouse at any one of four positions. Bags may also be discharged through the end of the warehouse by means of a chute directly into a truck.

Other Equipment

Steam will be generated by an 80 h.p. Scotch Marine boiler, insulated and fitted with automatic controls. The boiler is to be located in the basement of the mill structure. Because the boiler will have a forced draft the boiler stack will extend only a short distance above the warehouse roof.

There will be a 24,000-gal. molasses tank, 16,000-gal. MC-47 tank and a 10,000-gal. animal fat tank beneath the warehouse floor adjacent to the mill building. There will be a 30 by 24-ft. office building made of concrete block adjacent to the mill building on the truck side where the Fairbanks-Morse truck scale, dial and printer will be located.

The main power and light service, disconnect switches and motor starters will be located in the electrical room. All wiring will be rigid conduit with dust-tight fittings.

Development Corporation

The Cozad Industrial Development Corp. was a "tremendous factor" in the decision to locate at Cozad, Mr. Cooper said.

The development corporation executed a well organized courtship of the Cooper company. Numerous personal calls were made at the Humboldt office of the firm. Members of Cozad community prepared brochures supported by many photos of the city. The corporation sponsored a bus trip which took 29 Cooper employees from Humboldt and Beatrice to Cozad for a chicken lunch.

The people in Cozad joined to purchase a 10-acre plot which was donated for the building site. The Cooper firm then bought an additional seven acres, making a 17-acre tract. Cooperation also was extended on such things as streets and utilities.

Some 100 persons in the community bought stock in The O. A. Cooper Co. in an amount which totaled more than $50,000. These stockholders include a cross-section of persons in the area—farmers, cattle feeders, hog raisers, local businessmen, professional men and business employees.

PER CAPITA EGG USE AT 18-YEAR LOW

WASHINGTON—Reflecting smaller production of eggs and the larger population, per capita egg consumption in 1960 is declining to about 325 eggs (an 18-year low), compared with 347 last year, the U.S. Department of Agriculture reports.

In all but one month this year, per capita consumption of shell eggs was lower than in the corresponding 1959 month, even in the early months of 1960 when supplies were larger and prices lower than a year earlier, said the USDA.

D. L. Steele Named U.S.I. Representative

NEW YORK — Don L. Steele has been appointed a field representative for Morea liquid livestock feed supplement sales, according to U.S. Industrial Chemicals Co., Division of National Distillers & Chemical Corp.

Don L. Steele

Mr. Steele will headquarter in Salt Lake City. He will help develop the market for Morea liquid feeds for ruminant animals in leading cattle and sheep areas in the Intermountain States Area. His principal responsibility, the company said, is to promote sales of Morea premix to mixer-distributors who will blend and sell the final product to feeders and farmers.

Mr. Steele was formerly a field representative for Chas. Pfizer & Co., Inc., in the agricultural division. Before joining Pfizer, Mr. Steele was an assistant professor of animal science at the American University of Beirut, Beirut, Lebanon.

He holds a B.S. degree in animal husbandry from Utah State Agricultural College and an M.S. degree in animal nutrition from Utah State University.

Egg Market to Open

ROCKY MOUNT, N.C. — Carlisle Poultry & Egg Associates, Inc., will open a new egg market here.

Vance Weibley, manager of the Carlisle plant at Burgaw, made known plans for the Rocky Mount market at a meeting of county agents and representatives of egg producers and feed dealers from Nash, Edgecombe, Halifax, Wilson, Martin, and Northampton counties.

GALLIMYCIN has been proven better

In scientific studies at agricultural colleges and experiment stations, and in tests conducted at Abbott's Research Farm, GALLIMYCIN, used at a level of 5 grams per ton of feed, consistently produced better results.

Growth improvement in flocks fed GALLIMYCIN, based on an average of field trial results, was 5.8%. Yet, it takes *less than 1% improvement in growth to pay for GALLIMYCIN at the recommended level!* GALLIMYCIN-10 increased feed efficiency at the same time, producing greater net gains per pound of feed. In one trial, feed efficiency was 7.4% higher in the flock receiving GALLIMYCIN than in the control flock receiving no growth stimulant.

A 9-week floor pen test at the University of Arkansas, in which GALLIMYCIN was added to feed at a level of 5 grams per ton, produced these results: 190 lb. extra weight per 1,000 birds on 51.4 lb. less feed! These are impressive figures just as they stand, yet the dollar equivalent is even more impressive. Using a broiler market price of 18¢ and a feed cost of 4¢ per pound (exclusive of antibiotic cost), GALLIMYCIN produced $35.45 *extra profit* per 1,000 birds!

In another trial involving 5,300 birds, the average weight of GALLIMYCIN-fed birds at 9 weeks-six days of age was 4.12 lb. Feed conversion in the same test was 2.23.

GALLIMYCIN has been compared with the "older" antibiotics in numerous field trials and has consistently produced better growth responses from less feed. In Utah, the effect of GALLIMYCIN on growth promotion was studied in comparison with five other antibiotics. In these studies, GALLIMYCIN produced greater average weight and better feed conversion efficiency than any of the other antibiotics tested.

GALLIMYCIN-10 has been field tested in every major broiler area in the country. It is effective as a low-level growth stimulant (under practical growing conditions)...stimulating growth at a higher rate of feed efficiency. GALLIMYCIN-10 can be fed continuously, right up to the day of marketing; no withdrawal period is necessary. It's supplied in a free-flowing premix with a soy bean oil meal carrier, manufactured under rigid standards of Abbott quality control. And, GALLIMYCIN-10 carries a 24-month expiration date! GALLIMYCIN-10 is safe...proven; there are no special registration requirements.

It's not what it costs but what it pays that counts!

The higher initial cost of GALLIMYCIN becomes minor when measured against increased weight in marketable birds, plus savings in feed ...for the true cost of an antibiotic feed supplement depends on the results it produces.

Yes, you'll make more dollars with GALLIMYCIN-10 in your broiler feeds. Ask your Abbott man for complete details on what GALLIMYCIN feeding programs can pay you!

GALLIMYCIN®-10

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CHEMICAL MARKETING DIVISION
NORTH CHICAGO • MONTREAL

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Owner's viewpoint

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GRAIN DRYERS

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KERMIT LYNN, *Manager*
Lake Lillian Farmers Elevator Co.
Lake Lillian, Minnesota

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Convention Calendar

New Listings

For the convenience of readers who scan the Convention Calendar regularly for new listings, those added to the column in the current week appear separately from ones which have been entered previously. The following week they will be moved to their proper slot where they will remain until the event is held.

v v

1961

March 10-11—Oklahoma Feed Industry Conference and Workshop; Oklahoma State University, Stillwater; chm., Dr. Rollin Thayer, Poultry Science Dept.

April 24-26—Animal Health Institute; Mayflower Hotel, Washington, D.C.; sec., D. L. Bruner, 512 Shops Bldg., Des Moines, Iowa.

Nov. 27-28—Tennessee Feed Manufacturers Assn.; Noel Hotel, Nashville; sec., Charles H. Warfield, American Trust Bldg., Nashville.

Nov. 29-Dec. 1—Business Management Conference; Kansas State University; sponsored by the Kansas Grain & Feed Dealers Assn.; sec., Orris E. Case, 609 Wiley Bldg., Hutchinson, Kansas.

Dec. 1-2 — North Carolina Animal Nutrition Conference; North Carolina State College, Raleigh; chm., Dr. J. W. Kelly, Poultry Science Dept.; co-sponsored by North Carolina Feed Manufacturers Assn., sec., McNair Evans, Box 44, Mocksville.

Dec. 2-3—Arkansas Turkey Federation Convention and Show; Hot Springs, Ark.; exec. director, John Haid, Box 1446, Little Rock.

Dec. 2-3—Western Quickie Convention; Disneyland Hotel, Anaheim, Cal.; Don M. Turnbull, sec., American Poultry & Hatchery Federation, 521 E. 63rd St., Kansas City 10, Mo.

Dec. 6-7—Cornell Poultry Servicemen's Clinic; Cornell University, Ithaca, N.Y.

Dec. 6-7 — North Dakota Turkey and Egg Convention; Fargo Civic Center Auditorium, Fargo, N.D.; sec., Irving J. Mork, Fargo.

Dec. 7 — Upper Peninsula Feed Dealers Assn.; State Office Bldg., Escanaba, Michigan; sec., J. O. MacInnis, Box 342, Sault Ste. Marie.

Dec. 7-8—Midwestern Quickie Convention; Conrad Hilton Hotel, Chicago; Don M. Turnbull, sec., American Poultry & Hatchery Federation, 521 E. 63rd St., Kansas City 10, Mo.

Dec. 8 — Arizona Grain and Seed Assn.; Westward Ho Hotel, Phoenix; sec., Willis F. Nielson, Box 787, Mesa, Ariz.

Dec. 8—Ohio Agricultural Marketing Conference; Ohio Union Bldg., Ohio State University, Columbus; John W. Sharp, Room 334, Agr. Admin. Bldg., 2120 Fyffe Road.

Dec. 8-9—Eastern Quickie Convention; Ben Franklin Hotel, Philadelphia; Don M. Turnbull, sec., American Poultry & Hatchery Federation, 521 E. 63rd St., Kansas City 10, Mo.

Dec. 12-13 — Midwest Veterinary Nutrition Conference; Continental Hotel, Kansas City; Lloyd Larson, Midwest Feed Manufacturers Assn., 20 W. 9th St. Bldg., Kansas City 5, Mo.

Dec. 13-15 — Minnesota Poultry Hatchery Assn.; Hotel Radisson, Minneapolis, Minn.; sec., L. L. Baumgartner, Litchfield, Minn.

Dec. 15-16 — Business Clinic for Elevator Managers; Kellogg Center, Michigan State University, East Lansing; Carleton C. Dennis, Department of Agricultural Economics.

1961

Jan. 4-6—National Turkey Federation; Conrad Hilton Hotel, Chicago, Ill.; sec., M. C. Small, P.O. Box 69, Mt. Morris, Ill.

Jan. 9-10—Kansas Formula Feed Conference; Umberger Hall, Kansas State University, Manhattan; chm., Prof. T. B. Avery, Poultry Husbandry Dept., W. Waters Hall.

Jan. 12-13—Michigan Feed & Grain Dealers Assn.; Michigan State University, Kellogg Center; sec., Nevel Pearson, P.O. Box 472, East Lansing.

Jan. 13-14—Florida State Poultry Producers Assn.; Cherry Plaza Hotel, Orlando, Fla.; chm., Wilfred D. Hedges, 227 Blossom Lane, Winter Park, Fla.

Jan. 15-17—Indiana Grain & Feed Dealers Assn.; Claypool Hotel, Indianapolis; sec., Fred K. Sale, 600 Board of Trade Bldg., Indianapolis 4.

Jan. 16-17—Northwest Retail Feed Assn.; Hotel Pick-Nicollet, Minneapolis; sec., W. D. Flemming, 112 Grain Exchange Bldg., Minneapolis, Minn.

Jan. 23-25—Farmers Grain Dealers Assn.; Civic Memorial Auditorium, Fargo, N.D.; sec., Lloyd C. Hanson, 513 Black Bldg., Fargo.

Jan. 23-25 — Southeastern Poultry & Egg Assn.; Municipal Auditorium, Atlanta, Ga.; sec., Harold E. Ford, 235 E. Ponce de Leon Ave., Decatur, Ga.; for reservations: Atlanta Convention Bureau, Rhodes-Haverty Bldg., Atlanta.

Jan. 27 — Missouri Turkey Day; University of Missouri, Columbia; E. M. Funk, sec., Missouri Poultry Improvement Assn., Poultry Bldg., Box 568, Columbia.

Jan. 31-Feb. 1—Illinois Agricultural Industries Forum; University of Illinois, Urbana; Department of Agricultural Economics, 305 Mumford Hall.

Jan. 31-Feb. 1 — Hoosier Turkey Trot; Purdue Memorial Union, Purdue University, Lafayette, Ind.; John N. Howell, Turkey Department, Indiana State Poultry Assn., Poultry Bldg., Purdue University.

Feb. 1-2—Illinois Nutrition Confer-

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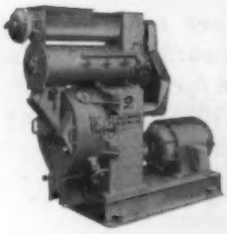

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ence; University of Illinois, Urbana; chm., E. E. Hatfield, Department of Animal Science.

Feb. 1-2—New Hampshire Poultry Health Conference; Memorial Union Bldg., Durham; sponsored by Department of Poultry Science, University of New Hampshire; Prof. W. C. Skoglund, Poultry Science Dept.

Feb. 2—Beef Cattle Study Day; University of Arkansas Agricultural Experiment Station, Fayetteville.

Feb. 2-3—Oregon Animal Nutrition Conference; Withycomb Hall, Oregon State College, Corvallis.

Feb. 3-4—Minnesota Turkey Growers Assn.; Leamington Hotel, Minneapolis; sec., Roy Munson, 2200 University Ave., St. Paul, Minn.

Feb. 6-7—Montana Nutrition Conference; Montana State College, Bozeman; chm., Dr. O. O. Thomas, Animal Industry and Range Management Dept.

Feb. 7-10 — American Dehydrators Assn.; Jung Hotel, New Orleans, La.; executive vice president, Joseph Chrisman, 430 Board of Trade Bldg., Kansas City 5, Mo.

Feb. 8-9—Pacific Northwest Feed Mill Production School; Hotel Leopold, Bellingham, Wash.; sponsored by Washington State Feed Assn.; mgr., John G. Wilson, 814 Second Ave. Bldg., Seattle 4.

Feb. 10 — Washington State Feed Assn., annual convention; Hotel Leopold, Bellingham, Wash.; mgr., John G. Wilson, 814 Second Ave. Bldg., Seattle 4.

Feb. 10-11—Poultry Fact Finding Conference; sponsored by Institute of American Poultry Industries; pres., Harold M. Williams, 59 E. Madison, Chicago 2.

Feb. 15—Turkey Short Course; University of Georgia, Athens.

Feb. 19-21—Midwest Feed Manufacturers Assn.; Hotel Muehlebach, Kansas City, Mo.; executive vice president, Lloyd S. Larson, 20 W. 9th St. Bldg., Kansas City 5, Mo.

CALENDAR FOR 1960-61

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Feb. 19-21 — Ohio Grain & Feed Dealers Assn.; Neil House, Columbus; sec., George G. Greenleaf, 5625 N. High St., P.O. Box 121, Worthington.

Feb. 22—Broiler Housing Symposium; University of Georgia, Athens.

Feb. 28-March 1—Virginia Feed and Nutrition Conference; Hotel Roanoke, Roanoke; sec., J. Paul Williams, Virginia State Feed Assn., 615 E. Franklin St., Richmond.

March 8 — Distillers Feed Conference; Sheraton Gibson Hotel, Cincinnati, Ohio; L. E. Carpenter, Executive Director, Distillers Feed Research Council, 1232 Enquirer Bldg., Cincinnati 2.

March 8-9 — Nebraska Grain & Feed Dealers Assn.; Sheraton-Fontenelle Hotel, Omaha; sec., Howard W. Elm, Trust Bldg., Lincoln, Neb.

March 15—Commercial Egg Production Short Course; University of Georgia, Athens.

March 16-17—Oregon Feed & Seed Dealers Assn.; Sheraton - Portland Hotel, Portland; mgr., Russ Hays, 702 Lewis Bldg., Portland 4.

March 16-17 — Maryland Nutrition Conference; Shoreham Hotel, Washington, D.C.; chm., Dr. R. D. Creek, Poultry Husbandry Dept., University of Maryland, College Park.

March 20-24—Grain & Feed Dealers National Assn.; Washington D.C.; sec., Herbert L. Sharp, 400 Folger Bldg., Washington 5, D.C.

April 3-4 — National Institute of Animal Agriculture; Purdue University, Lafayette, Ind.; sec., Karl D. Butler, P.O. Box 521, First National Bank Bldg., Ithaca, N.Y.

April 9-13 — American Association of Cereal Chemists; Baker Hotel, Dallas, Texas; 1955 University Ave., St. Paul 4, Minn.

April 10-12—Poultry & Egg National Board; Sheraton Towers Hotel, Chicago, Ill.; mgr., Lloyd H. Geil, 8 S. Michigan Ave., Chicago 3.

April 13-15—Pacific Dairy & Poultry Assn. Exposition and Convention; Riviera Hotel, Las Vegas, Nev.; asst. sec., Lloyd J. Powers, 1304 7th St., Los Angeles 21, Cal.

April 20-22—California Hay, Grain & Feed Dealers Assn.; Jack Tar Hotel, San Francisco; sec., Leo L. Johnson, Blue Anchor Bldg., 1400 10th St., Sacramento 14.

April 27-29—Kansas Grain & Feed Dealers Assn.; Broadview Hotel, Wichita; sec., Orris E. Case, 609 Wiley Bldg., Hutchinson.

May 5—Broiler Short Course and Chicken-of-Tomorrow Day; University of Georgia, Athens.

May 7-10—American Feed Manufacturers Assn. Convention and National Feed Show; Conrad Hilton Hotel, Chicago, Ill.; sec., W. T. Diamond, 53 West Jackson Blvd., Chicago 4.

May 7-10—Association of American Feed Control Officials; Hamilton Hotel, Chicago; sec., Bruce Poundstone, Head, Feed and Fertilizer Control Dept., University of Kentucky, Lexington.

May 14-15—Missouri Grain & Feed Assn.; Hotel Coronado, St. Louis, Mo.; sec., D. A. Meinershagen, Higginsville, Mo.

June 8-11 — Canadian Feed Manufacturers Assn.; National Convention; Manoir Richelieu, Murray Bay, Quebec; national secretary, W. N. Hendrick, 2901 Bloor St. W., Toronto 18, Ont.; for registrations, T. G. Sevigny,

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July 18-20—American Poultry Congress & Exposition; Municipal Auditorium, Minneapolis; Don M. Turnbull, sec., American Poultry & Hatchery Federation, 521 E. 63rd St., Kansas city 10, Mo.

July 24-23—Southeastern Egg Quality and Grading School; Auburn University, Auburn, Ala.; sec., Southeastern Poultry & Egg Assn., Harold E. Ford, 235 E. Ponce de Leon Ave., Decatur, Ga.

Aug. 24-26—North Carolina Feed Manufacturers Assn.; Virginia Beach, N.C.; sec., McNair Evans, Box 44, Mocksville.

Sept. 19-21—Marketing Seminar for Feed Manufacturers; Morrison Hotel, Chicago; Sales Executives Council, American Feed Manufacturers Assn., W. E. Glennon, president, 53 W. Jackson Blvd., Chicago.

Sept. 27-29—Pennsylvania Millers & Feed Dealers Assn.; Hotel Hershey, Hershey, Pa.; sec., D. W. Parke, P.O. Box 329, Ephrata, Pa.

Oct. 4-6—Texas Nutrition Conference; Texas A&M College, College Station; chm., Dr. J. R. Couch, Poultry Science Dept.

Oct. 23-25—Centennial Nutrition Conference; Hotel Muehlebach, Kansas City 5, Mo.; sponsored by Midwest Feed Manufacturers Assn. and Land-Grant Colleges in Midwest's area; executive vice president, Lloyd S. Larson, 20 W. 9th St. Bldg., Kansas City 5, Mo.

Oct. 26-28—Association of American Feed Control Officials; Shoreham Hotel, Washington, D.C.; sec., Bruce Poundstone, Head, Feed and Fertilizer Control Dept., University of Kentucky, Lexington.

Nov. 8-9—Illinois Feed Assn.-Illinois Poultry and Hatchery Federation joint convention; Springfield Armory, Springfield; sec. I.F.A., Dean M. Clark, 141 W. Jackson Blvd., Chicago 4; sec. I.P.H.F., Aubrey Harless, Shelbyville, Ill.

1963

Aug. 13-18—12th World's Poultry Congress; Show Grounds of the New South Wales Royal Agricultural Society, Sydney, Australia; Dr. Cliff D. Carpenter, chairman, U.S. Participation Committee, 1207 Emerald Bay, Laguna Beach, Cal.; Dr. A. William Jasper, secretary, c/o AFBF, 2300 Merchandise Mart, Chicago 54, Ill.

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CARB-O-SEP
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CARB-O-SEP has the unique ability to give top blackhead protection — without introducing the serious, undesirable side reactions breeders have long associated with the use of blackhead preventives. CARB-O-SEP's freedom from costly adverse side reactions has been convincingly proven in both meat birds and breeding birds.

CARB-O-SEP protected meat birds have attained outstanding results in feed efficiency and weight gains. Breeding birds fed CARB-O-SEP have maintained the finest kind of performance records in fertility and hatchability.

Over the past 4 breeding seasons, CARB-O-SEP has been successfully used by breeders all over the country. "84% hatchability" is the most recent report on breeder hatchability.

So—it is no longer necessary for the breeder to run the risk of blackhead striking his valuable breeding birds. CARB-O-SEP offers the turkey breeder an effective way to successfully protect his birds from blackhead without sacrificing valuable fertility and hatchability.

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Bemis Buys Interest In Systemation Corp.

ST. LOUIS—Bemis Bro. Bag Co. has acquired a substantial interest in the Systemation Corp., a St. Louis area firm which specializes in development of integrated and automated packaging systems and machinery, it was announced by F. G. Bemis, Jr., director of allied operations for his company.

"The Systemation Corp. is a new and highly imaginative organization which already has made substantial contributions to advanced packaging systems and equipment in several industries, notably for drug and paint companies," Mr. Bemis said. "It will strengthen our diversification program into allied packaging fields and supplement the assistance we already provide industrial customers through our packaging service organization."

Mr. Bemis said that the added financing and administrative support which will be provided through his company's arrangement with Systemation will give the smaller organization a maximum opportunity to exploit its growth potential.

The company, with plant and office headquarters in suburban Chesterfield, Mo., was founded in 1958 by its president, Philip H. Lanham.

Responses from Enzymes Reported

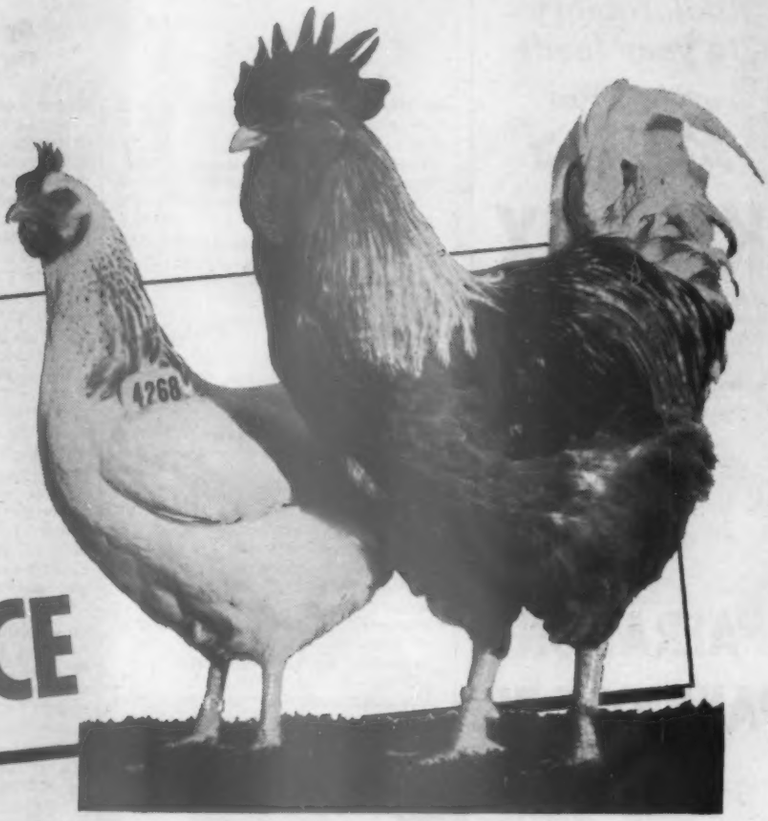
NEWARK, N.J.—Favorable growth responses in poultry and beef cattle and increased egg production among hens, through use of enzyme supplements in feeding, were described in a recent scientific paper by C. M. Ely, head of the biological research laboratory of Nopco Chemical Co., Newark. The paper was presented at the Fifth International Congress on Nutrition in Washington, D.C.

Nopgro, a fungal and bacterial enzyme product for poultry and cattle feeding, was among enzyme supplements whose effects in promoting growth and feed efficiency of chicks were discussed by Mr. Ely. He said that in an experiment with caged layers, it resulted in "appreciably" increased egg production.

Beef cattle fed various commercial and experimental enzyme supplements showed "very good initial growth responses," Mr. Ely said. He indicated that further experiments are being conducted to determine the effect of feeding enzyme supplements at different times during the growing and finishing periods.

BETTER THAN EVER 108s

AT A NEW LOW PRICE



Parents of the 108

The Nichols 108s that are available *now* are the finest birds that you have ever been able to buy. If you have some of these newest 108s, go out and look at them. (If you don't have any yet, look at a friend's flock.)

See how healthy they are . . . how uniform, big and meaty, and the offspring snow white when mated to leading male lines. Watch them go through the lines with low, low condemnations. Compare their records with any other birds. Check the new, low price. Then you'll see why we say you can't afford *not* to have these 108s.

This Is Why They Are Better

Today's 108s are a proven cross, the result of many years of crossbreeding with many different strains, not just a one or two year's "crash program" to produce a crossbred.

The 108 chicks you can buy today come from parents that have been under intensive selection pressure for meat.

The 108s have always led in production and hatchability and now they can hold their own anywhere in growth while excelling in the health and uniformity that only true crossbred vigor can produce. And because the 108s have so many years of crossbreeding behind them they can be reproduced in quantity without losing any of their bred-in qualities.

Prices Are Lower, Too

Because of operating economies and better distribution it is now possible to offer these fine 108s at a considerably lower price. New low price, better bird than ever. Take advantage of this great opportunity for profits by placing your order today. Order 108s from Nichols at Parkview 9-3890, Brunswick, Maine; 4941 Greensboro, Georgia; or any Arbor Acres office.

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Glastonbury, Conn. • San Luis Obispo, Calif. • Springdale, Ark. • Thorntown, Ind. • Carthage, Miss. • Skowhegan, Me.
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Kellogg's secret *toasting* process greatly improves appearance and taste, helps lock in cereal nutrients.

Meal or crumbs—bulk or sacked.

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AERATION PAYS OFF BIG IN '60

Insect Infestation Held To Minimum

Wondering if aeration is worth the cost? Then read this. Aerated elevators all over the country are reporting grain temperatures as low as 40° at the end of summer and, as a result, stored grain insects have been less of a problem this year than ever before.

The long cold winter plus the cool spring and moderate summer have helped. But it's aeration that has really made these record low grain temperatures possible. Good aeration means low grain temperatures and minimum insect infestation, uniform moisture content and elimination of hot spots and crusting.

How can you be sure aeration will do this for your grain? Just depend on Douglas. Douglas has been in the grain sanitation business for 44 years. Its aeration system is based on the engineering knowledge of air movement in grain and Douglas' specialized knowledge of the effect of storage conditions on grain.

Why not get the facts? See why Douglas gives you the most economical, most efficient grain aeration possible. Write for full details—no obligation. Grain Aeration Division, Douglas Chemical Company, 620 East 16th Avenue, North Kansas City, Mo.

THE EFFECTS OF INTEGRATION ON ACCOUNTS RECEIVABLE

By John L. Emery
The Quaker Oats Co.

The development of integration is bringing credit to the attention of top management and placing the credit man in daily contact with management functions. His has become an important voice in the affairs of a feed business.

What sort of a person is this credit man who, as the result of integration, finds himself involved in management level problems?

He is a man who must:

First—Satisfy the treasurer that funds outstanding in accounts receivable are in strong hands, capable and willing to pay invoices when due.

Second—He must satisfy the sales department that he is not restraining their desire for tonnage to an unhealthy degree.

Third—He must convince the production department that failure to approve an order that makes a nice, neat, uniform production schedule is in the best interests of the company.

Fourth—He must convince the customer his polite efforts to collect amounts due are in the normal course of business and not an evil design to further a personal grudge.

Fifth—He must be all things to top management whose instructions translated into practical English generally mean, "Don't lose money, but don't lose sales either."

This person, this credit man in the feed business, is the result of or a by-product created by a far-reaching revolution which has been taking place in the agricultural industry for years. It is still going on in many areas and from all available evidence will continue to expand into new fields as time goes on.

Credit Ratio Expands

Not so very long ago a general rule of thumb stated that receivables in the feed business should be equal to approximately $10 for each ton sold annually. In other words, an organization selling 100,000 tons of feed per year had feed receivables of about $1,000,000. From what I hear it is no longer possible to maintain this ratio.

Not so long ago I attended a credit convention and spent one day with feed credit managers. One of those present stated in his opinion we would soon be talking about a ratio of 15-1. Another credit manager of a well known feed manufacturer spoke up and said he wished he could "get back to 15 to 1 now." Apparently the "sky is the limit" and, as of now, no one knows where it is.

An examination of the enormous change taking place in the production of livestock and poultry may give us a better understanding of why it is taking so many more dollars to finance the sale of one ton of feed.

Prior to the Second World War, the production of meat, milk or eggs was a local operation, generally locally financed with small surpluses being created by thousands upon thousands of small units. These surpluses were gathered together and shipped to central markets.

Because the feed business was built on a dealer foundation, the credit function was relatively unimportant to most manufacturers. Credit duties generally were an accounting department function.

Generally speaking, merchandise was sold on a draft basis. Occasionally a customer was unable to pick up a draft and a credit problem developed. A car of feed was diverted to another customer, returned to the mill, or a short-term pay out program was arranged. It was fairly simple to solve all feed credit problems without loss.

Credit, or the use of credit, was a defensive measure used to protect the manufacturer.

It is also well to remember there was very little connection between the sale of merchandise and its ultimate disposition. The customer could eat it, burn it, feed poultry feed to hogs, let rats get into it without complaints from the feed company.

Most of us were not concerned with the feeder operation, as long as the customer picked up his drafts when they were presented to his bank.

This simple type of operation made completion of a feed sale relatively easy and required very little money on the part of the feed company to finance accounts receivable. Comparatively speaking, the manufactured feed business was a cash business.

Our customers were wholesalers. They were the dealers who in turn retailed their merchandise in bag lots to small feeders. Most users of formula feed were individual farmers diversified into several agricultural pursuits. A bag or two of chick starter, for example, in the spring was enough to start the entire laying operation of a particular farmer. It was a small business, dealing in small units, with a large healthy profit margin.

If production finance was necessary, dealers or local banks were able to carry their customers' receivables without too much financial strain. These demands for credit were confined to the small, diversified users of manufactured feed and generally speaking were in comparatively small amounts.

Product Demand Increases

World War II created a demand for meat. All segments of the agricultural economy expanded production and facilities to meet the large demands placed upon it for food. At the same time demand for food products was expanding, there developed, in the U.S. at least, a need for an agricultural income in many worn-out farm

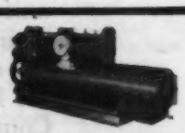
(Turn to page 58)

EDITOR'S NOTE: John L. Emery is assistant treasurer of The Quaker Oats Co., Chicago. This article is from a talk given by Mr. Emery at the Canadian Feed Manufacturers Assn. convention.

Wenger LEADS THE INDUSTRY IN PRODUCING INTEGRATED FEED PROCESSING EQUIPMENT

Pellet Mills • Liquid Systems • Coolers • Liquid Mixers • Multi-Blenders

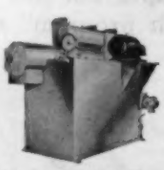
For *every* size of feed mill, Wenger manufactures today's most efficient feed processing equipment. Join the ranks of many feed manufacturers who look to Wenger for all their major feed processing equipment. Select the unit which fits your particular needs from the most complete line of liquid conditioning, liquid blending, pelleting, cooling equipment. Or ask your Wenger representative to prepare a layout of all your feed processing requirements. Wenger integrated feed processing systems are your assurance of low cost production on top quality feeds. Tomorrow's Feeds Today, with Wenger.



Molasses Mixers in Six Models. For overhead or floor mounting. 3 to 60 tons per hour. Inclined Auger Feeder models available in smaller sizes for installation over driveways.

Multi-Duty Pellet Mill. Hard Pellets, Hi-Molasses Pellets (optional), Wenger Blended Mash Feeds with 1 or 2 liquids, all from one packaged unit. 50, 75 & 100 H. P. sizes.

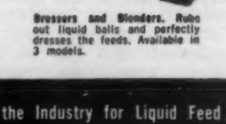
Multi-Blenders. Built in 3 sizes to apply several liquid feed ingredients simultaneously. Molasses, animal fats, fish solubles, liquid whey, etc. Capacities 8 to 60 tons per hour.



Packaged Unit Liquid Mixers. One of ten models for conditioning, feeding and blending any liquid feed ingredient. Capacities from 3 to 60 tons per hour.

Liquid Conditioning Feeders. Models to meter 1 to 4 liquids to hard type pellet mills or mixers.

Coolers. For Hard Pellets, Molasses Pellets or Steamed Grains. 14 sizes of single-stage or two-stage superposed. Capacities of 3 to 40 tons per hour.



Dressers and Blenders. Rubs out liquid balls and perfectly dresses the feeds. Available in 3 models.

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when you replace high-cost skim milk with Borden's low-cost new Hi-Fat MRB®

New Hi-Fat MRB, a development of Borden's Nutrition Research Laboratory and Test Farm at Elgin, Illinois, now gives you more mixing flexibility than ever before in the preparation of economical calf milk replacers, calf starters and other specialty feeds that call for high fat content.

In addition to its palatable and highly-digestible whey solubles and soy flakes, the New MRB formula contains choice white grease to bring the fat level up to 15%. By having your extra source of animal fats evenly dispersed in a product that flows freely and mixes easily you can actually cut down on mixing time as well as your product inventory.

Borden's Hi-Fat MRB – as well as the regular MRB formula – are the only Milk Replacer Bases available to the industry. They are both higher than dry skim milk or buttermilk in protein, gross energy values and vitamins. Yet, in spite of their nutritional superiority, Hi-Fat MRB and MRB are significantly lower in price than other milk nutrient sources.

Both MRB formulas are free-flowing, easily mixed and readily suspended when your calf milk replacers are reconstituted with water. Mix after mix, you'll find the MRB formulas consistently superior products that will fit all your formulation requirements for high-quality milk nutrients at a low cost.

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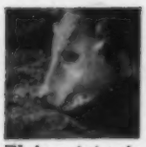
Replace high-cost milk nutrients in all your specialty feeds with low-cost MRB and Hi-Fat MRB — Calf Milk Replacers · Calf and Pig Starters · Dog and Cat Foods · Mink and Fish Feeds

MARKET FOR "ROUGHAGE-BUSTING" SUPPLEMENTS IS BIG AND STILL GROWING!

How to capitalize on it? By offering to corn silage feeders a supplement that contains Aureomycin... the additive that shows its greatest response in high roughage rations.



Feed manufacturers have watched with increasing interest the tremendous swing to silage feeding in Corn Belt and Northern Plains states in recent years.

Estimates of feeder animals now on silage run as high as 15 million yearly. And the silage feeders are the *big* ones — they feed out 3 times as many cattle per farm as non-silage feeders.

Market invites you

This is a *made-to-order* market for feed manufacturers. Silage feeders are good supplement customers . . . they've learned that special "roughage-busting" supplements are markedly superior to straight oil meals. Since these feeders often use 2½ to 3½ pounds of supplement per head per day, sales opportunities are enormous.

Reach market with one feed

Usually, only one formulation is required to meet the needs of corn or sorghum silage feeding. Your mixing job is simpler. Your *selling* job is easier. And it's still easier when your supplement contains the wide-spectrum antibiotic, AUREOMYCIN®.

What Aureomycin provides

Your "roughage-busting" supplement for silage feeding gives all these extra values when it contains AUREOMYCIN:

1. All types of beef rations are better with AUREOMYCIN. But, percentagewise, the greatest response — in extra gains, improved feed efficiency and lowered cost — is in high roughage rations. See chart at right.

2. AUREOMYCIN not only promotes growth and saves feed but also improves health — helps prevent shipping fever, bacterial diarrhea (scours), foot rot, liver abscesses, rhinotracheitis and subclinical diseases.

3. AUREOMYCIN is the one additive beneficial in all stages of production — wintering cows, calves and yearlings; growing and fattening animals.

4. AUREOMYCIN is ideally suited to the long-term feeding done on silage. It keeps cattle healthy and *on feed* through adverse weather and other stresses.

If you wish more facts on the silage market and on AUREOMYCIN in supplements, get in touch with your Cyanamid representative. American Cyanamid Company, Agricultural Division, New York 20, N. Y. ®*AUREOMYCIN is American Cyanamid Company's trademark for chlortetracycline.*

PROOF OF ECONOMY OF FEEDING AUREOMYCIN IN A CORN SILAGE RATION

This recent Iowa Experiment Station trial is typical of many showing the benefits of feeding AUREOMYCIN. These benefits are over and above those of stilbestrol, since both rations contained stilbestrol.

	NO ANTIBIOTIC	AUREOMYCIN
No. of animals	14	14
No. days on exp., av.	98	98
Av. initial wt., lbs.	540	535
Av. final wt., lbs.	713	729
Av. daily gains, lbs.	1.77	1.99
Feed per 100 lbs. gain, lbs.	465	413
Feed cost per 100 lbs. gain	$13.50	$12.30

Average daily ration for both groups was, in pounds: corn silage 24.5, ground ear corn 3, alfalfa hay 3, supplement and minerals 1.1, total 31.6.

CYANAMID

AUREOMYCIN
IN FORMULA FEEDS

CYANAMID SERVES THE MAN WHO MAKES A BUSINESS OF AGRICULTURE

areas, particularly in New England and the South. There was available labor and land and, in the South at least, climate. These areas were naturals for poultry.

There was no problem, obviously, selling agricultural production during the war. After the war, a decision had to be made to go back to the old way of doing business, or continue to expand. The decision was to expand. Production was accelerated by government production controls in cotton, peanuts and tobacco in the South. Many little farmers were squeezed out of production completely, so they turned to poultry and other livestock.

This trend toward specialization and expansion created an entirely new set of problems. You are all familiar, for instance, with the figures of 143 million 2.9 lb. broilers produced in the U.S. in 1940, and the 1,731 million 3.3 lb. broilers produced in 1959. Think for a moment of the fantastic number of problems created as the direct result of specialization in the broiler growing business alone by many people. The same kind of specialization was and is taking place at a slower pace in other segments of the business of producing meat, milk and eggs.

As units have grown it has not been possible for the average feed dealer to deliver a few bags of feed periodically to specialized growers.

They have become carload buyers, and in a few cases, buyers of many carload lots every day.

Credit Demand Increases

The need for credit increased in proportion to the increase in size of operations, and very few dealers have had the financial worth to carry receivables for the time needed to convert feed into meat, milk or eggs.

Dealers had been in the habit of carrying receivables, but as demands upon them for credit increased, many of them in some areas were forced to close their doors and go out of business. Others became specialists themselves and began to produce meat products, particularly poultry, for their own accounts.

I am sure your experience has been the same as ours. For a few years the more aggressive and better financed dealers in areas being integrated attempted to carry increased demands for credit dollars on their own books. Many of them attempted to finance their own requirements resulting from their decisions to specialize.

Eventually, most of them, however, found it financially impossible to satisfy urgent demands for more and more dollars and longer and longer terms.

Credit Sources Needed

Other sources of credit had to be found. Banks (in the U.S. at least) have been slow to recognize the profit possibilities in advancing loans to the big commercial specialized farmer. Other sources of available capital have had to be found.

Where is the most obvious source?

Manufacturers of formula feeds have been aggressively pushing specialization and growth in the livestock and poultry feed operations in anticipation of increased tonnage of manufactured feeds sold. For the most part, manufacturers are financially able to assume the responsibility of financing the expanding industry.

Today, a large percentage of feed sales is financed by the manufacturer, and the manufacturer has been forced to take a greater interest in the use to which his products are being put. In fact, as a result of integration he has, in some cases, found himself in the business of producing meat, milk or eggs either as an end product or indirectly as a result of financing producers involved on a commercial basis.

I believe an examination of integration is needed to make this picture clearer to us all. In that way we should have a better understanding of the effect of integration on the fiscal policies of many feed manufacturers.

I do not propose to discuss the merits or demerits of integration. For several years wherever feed people have gathered, integration has been discussed or cussed, depending on the mood and the outlook of the speaker. Farm organizations have met and passed resolutions denouncing the slave labor aspects of integration.

Panels of experienced feed people, professionally respected, have "pointed with pride" or "viewed with alarm." I am not qualified to clear up the confusion nor do I have any intention of making predictions concerning the ultimate outcome of the revolution now going on in the production of meat, milk and eggs.

My concern is with the effects on accounts receivable of this major change in the feed business. In turn, the necessity for changes in fiscal policy of all of us in the formula feed business needs to be discussed.

In order to set the scope of a discussion of integrated farming a definition is needed.

Integration Defined

I am borrowing a description developed by someone else. It is "one firm, or a small group of firms working in concert, supplying operating capital, guiding production, processing and marketing a farm product." That definition describes a situation which is a far cry from the normal concept of farm production.

Ever since the feed manufacturing business began, we have directed our thinking toward the farmer, the agriculturalist, the tiller of the soil.

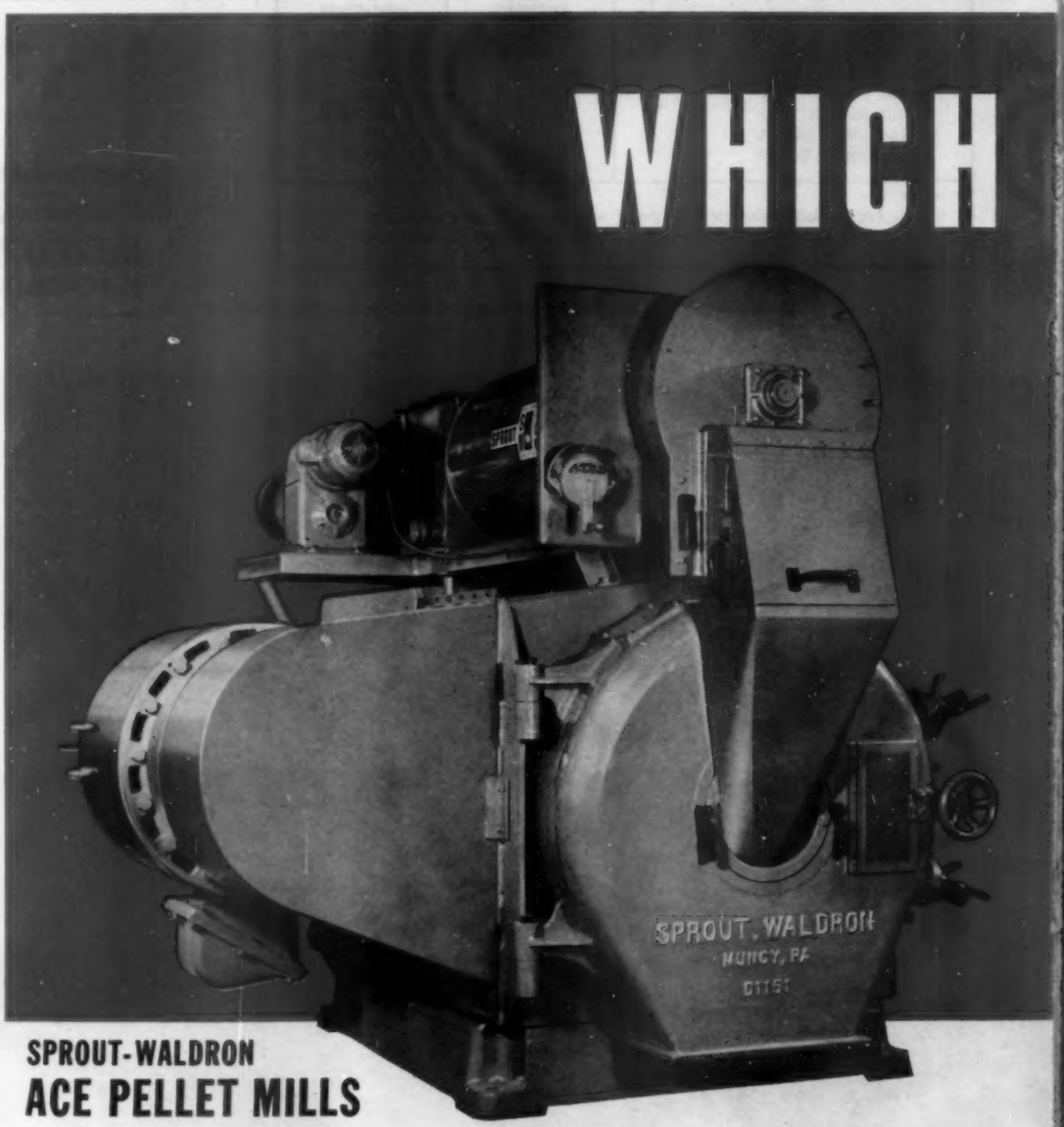
We have always been aware that farming is a highly competitive business. Some farmers don't make much money.

We have relied, however, on having the advantage of a good production year or good prices for one enterprise helping to offset the chances of a crop failure or low prices for other commodities.

A general farmer might have losses on hogs but profit from the sale of grain. Eggs might be selling at a loss, but something else, maybe a wheat crop, absorbs the loss.

Integration, however, has produced the specialist. Generally speaking, the specialist confines his activities to the production of one end product. His feeding programs are directed toward the development of meat type hogs to market weight, or the production of as many grade A large eggs as he can from each commercial hen or the sale of a 3½ lb. broiler with as little feed in it as possible.

Integration and specialization have created a special set of circumstances, producing a businessman who is in



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IRRADIATED DRY YEAST
RICH IN VITAMIN D FOR FOUR-FOOTED ANIMALS

the business of producing meat, milk or eggs.

We can no longer think of this integrated producer as a farmer, but must handle him, think of him and finance him as a businessman.

The old fashioned farm lending approach is no longer adequate. If the production of meat, milk or eggs is now a business, it needs the same business approach used in any other type of business enterprise.

Farm Size Increases

Another characteristic of integration is size. Commercial farms are increasingly resembling manufacturing plants. I believe we are safe in saying that commercial farms will continue to increase in size and decrease in number even if vertical integration should not develop as far as some people expect. You are all aware gross margins are much narrower today than they were a few years ago. As a result, profits depend more and more on increasing volume with the result that increasingly larger units may be expected.

With increases in size a new problem develops.

Capital requirements per unit have increased to the point where it is difficult to accumulate in one lifetime a sufficient amount to finance an economically sized commercial unit. As a result of increased size, a portion of each producer's time must be devoted to financing his operation.

In my opinion, producers of agricultural products are justified in borrowing money to meet current operating expenses and to make capital investment which will increase farm earnings, provided they use the approach of a well-informed businessman to their credit needs and have the services of well-informed lenders. This is where the feed credit man enters in the picture.

Financial Risk Shift

As a result of this need for greatly increased production capital in an integrated operation, the financial risk seems to be shifting from the producer to the financing agent. Concurrent with this shift is a magnification of profits and/or losses. In other words, there is considerable leverage in every integrated project. A mistake in judgment becomes more serious in a big enterprise than in a small one. As we have said, farming, at best, is a high-risk business. Sale of product is subject to many factors beyond the producer's control. Farm products go to a stubborn market—it wants a specific supply. If a little too much goes to market, prices decline. If the supply is short, prices increase rapidly.

As a result, farm income fluctuates from year to year. When specialization enters the picture, magnified by size with results depending upon the sale of a particular product at a cost above the price of production, its obvious risk has been increased several-fold. Profits and/or losses are multiplied substantially over those to be expected from a diversified operation with the same capital investment.

Characteristics Listed

To sum up, we might say then integration has the following characteristics of interest to the financial man:

1. Specialization—lack of diversification.
2. A business rather than a farm operation.
3. Increased capital requirements.
4. Lower profit margins.
5. Leverage — wide fluctuations in profits and losses.

If we then, when talking about integration, think of a business concentrated into large specialized units; needing large capital requirements; having low profit margins; needing increased production volume, we are in the right frame of mind to approach financing.

It is apparent financial management is becoming increasingly more important if every ton of feed sold to these integrated operations requires longer terms and more dollars per ton sold at greater risk.

Ways of Financing

I would like to discuss ways and means of financing the specialized integrated operator.

I believe it is obvious from what has been said up to this time that the old concept of shipping merchandise on an order-to-order basis or on 10 or 30 day terms has ceased to be "normal" in the feed business in integrated areas.

As a result, we are no longer selling merchandise on credit terms; we are actively engaged in financing independent businessmen employed in producing meat, milk and eggs for the consumer.

Entirely different approaches, concepts and controls have had to be developed by those attempting to control the fiscal problems of the feed manufacturer.

Controls Needed

Programs are created to sell feed but, equally important, they are also created with the idea of producing a pound of saleable meat or a dozen eggs or a gallon of milk at the lowest possible cost within the shortest time possible. Controls are necessary to provide that the feeder will receive the amount of feed to do a particular job, he will receive no more than is needed, and when the job is completed, sale of the products produced by the use of feed will provide sufficient funds to pay feed bills due.

Credit has become a sales tool or aid. It is no longer a defensive measure. Therefore, the financial man can no longer function isolated from the producer.

The proper use of credit is a tre-

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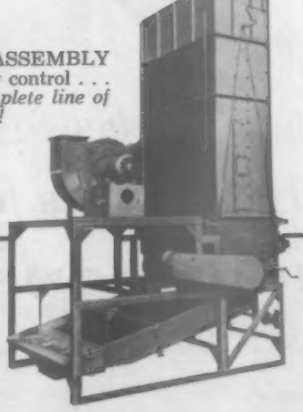

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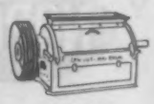
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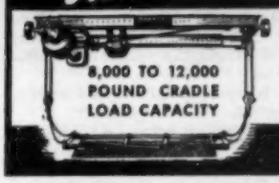

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mendous challenge to those of us in the credit end of our business. Unless we are all to suffer from the disastrous effects of uncontrolled credit, proper use and control are a necessity.

How can we in the credit end of this business develop proper use and control over our credit dollars?

"Making Investments"

In the first place, we can quit talking about credit in connection with direct feeder sales to integrated operators. We are financing our customers. We might be a little more practical and say we are entering into business with them and making investments.

The subject of this discussion could easily be "It isn't credit; it is finance."

What is the difference between credit and investment as it pertains to the feed business?

For many years, most credit analysis in the feed business has been in terms of maturity dates of invoices even though a completely integrated operation was receiving credit. Frequently, this analysis includes reading a report from a salesman and review by the credit manager of financial statements with particular reference to net worth, credit reports, etc.

The changing character of the feed business, however, indicates greater emphasis be given to the approaches used by the investment analyst. It is impossible, in my opinion, to think in terms of normal credit transactions in connection with capital loans, long-term relationships, the sharing of risk arrangements, production loans which are really revolving credits, large-scale enterprises and multiple corporations.

Investment Research

Investment research into this type of financial relationship must be dependent upon a much broader investigation into the affairs of our customers than is needed in the normal credit relationship.

For instance: 1. Does the customer have adequate records and reports? Are they readily available? Is he operating out of a cigar box or do his records reflect his financial condition and the results of operations for a period of years?

2. Cash flow: Can you readily determine for a period of years what has happened to his profits and/or losses and his depreciation? Can you establish there is ample working capital, and that an adequate margin exists for all normal contingencies plus some balance for the unusual?

Does he plan his financial requirements for a period ahead? Does he know what will be needed to meet interest and principal payments on debt and when money is due and where it will come from?

Is he sufficiently aware of his accounts receivable, inventory and fixed asset position so that he is not going to become frozen and unable to operate?

In this connection we must also be aware that net worth must be present—it is important, but profits are the lifeblood of a business. If a projection indicates inadequate profit levels, there is a business headed for trouble unless the profit picture can be raised to the proper levels.

3. Management is to a business what a spark-plug is to your automobile. This is one of the most important factors in the entire analysis of a prospect or current customer. How effective is management? Is there direct control? Is provision made for adequately trained people to take the place of present management in the event a change takes place? Does management have thorough knowledge of the business?

Even efficient operating management is not a guarantee of success. It may be offset by poor financial management.

In this connection it is well to remember, the big operator of today developed primarily as a specialist or technician in some phase of the business.

Unless he develops, or has available, sound business management counsel, he may find himself in financial difficulty as the result of improper fiscal policies. We have all seen examples in the broiler industry of companies whose net worths, accumulated over a period of years, have been eliminated almost over night by staggering losses.

At the risk of being repetitious, I would like to repeat at this point, major financial factors which can ruin an efficient operation.

1. Over-expansion.
2. Freezing of assets into fixed items or receivables.
3. Failure to provide sufficient working capital.
4. Inability to withstand sharp declines in the market.

As we have noted, financial analysis is becoming of paramount importance in the extension of feed credit. As a result, the return of working capital as an important factor in the

(Turn to EFFECTS, page 95)

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GRAIN BANKS

(Continued from page 44)

clearly distinguished from shrink or storage costs.

5. Farmers point to the fact that when grain is stored at home, it can be used as collateral for a loan. Only one-fourth of the elevators in Ohio are federally licensed, and with no state licensing, few of them can give warehouse receipts.

6. Farmers consider themselves in a poor competitive position when grain is stored at a grain bank. They lose a certain amount of freedom. They also lose alternatives for competitive feed pricing. In giving up this freedom, farmers feel they should have a guaranteed feed price in return.

7. Most farmers believe that they receive poorer quality grain than they delivered. They think the elevator accepts grain based on destination grades and doesn't give the farmer the same privilege when grain is checked out. They recommend that each checkout be accompanied by a sample of grain contained in the delivered feed and that quality adjustment be made on returned grain on the same basis as it was received.

It is interesting to note when evaluating the farmer-feeders' criticisms of the grain and feed bank all the disadvantages cited were operational rather than economic. We could conclude that the burden of responsibility rests with the elevator and feed mill operator to correct operational deficiencies or a sound economic idea will fail because of poor operational procedure.

Grain Bank Future

With these obstacles and limitations in mind, what does the future hold in store for grain bank operations? It is difficult in a rapidly changing agricultural economy to make accurate predictions for the future.

Based on past experiences, I believe future operation of the grain bank will require major adjustment at the elevator level, both in facilities and service, with a major emphasis on service. Many of the old plants are not adequate to perform the services needed to operate an efficient grain bank operation. If grain banking operations are to be performed by the elevator or feed mill agency, the storage developments at this point must be ahead of smaller storage units on the farm.

Farmer-feeders are getting larger. Storage on the farm is a more realistic alternative now than a few years ago when their operations were smaller. Recalling my earlier statements concerning the economies of scale of operation enjoyed by the elevator in storing feed grains, we must admit that as feeders get larger and demand larger quantities of feed grain, their own opportunities for economies of scale of operation are greater than they were previously. Thus, much of the competition on the grain bank will come from the farmers themselves.

We have yet to determine the basic reason why grain banks work well in some communities and poorly in others, especially when the atmosphere seems homogeneous. We can speculate that the secret of success is contained in the package services normally associated with grain bank operations. Some specific items may be the quality of the delivery service, quality of the grain returned, the method of assessing charges, the price of supplementary feeds, distance and time.

Entire Feed Programs

It is my opinion that in the future the grain bank cannot stand alone and survive. I anticipate a greater emphasis on selling entire feed programs of which feed grain storage will be a part.

Feed firms will become more sensitive to the needs of the farmer-feeder in service because service will become as important to feeder profits as good rations. These needs will change and with each change will come changes in the cost relationships both at the farm and at the elevator level.

A vigilant awareness of the flexibility of this facilitating service and the ability to quickly adjust to the changes will determine the success of the entire program. There will be offsetting short-time competition to the grain bank by innovations such as mobile feed units and on-the-farm grinding.

Developments in these areas usually result when farm prices are in a relatively low position such as 14¢ hogs as compared to 20¢ hogs. This has always been true with most innovational developments, particularly in agriculture.

Most of the operators of elevators, feed stores and possibly mobile feed units would like to keep things much as they are. If changes are to be made, they would rather the others didn't make them. We resist change, yet we fully realize that change will always be with us. If we resist change by doing nothing, we can expect innovation itself to compete us out of existence. Therefore, we must accept change whether we like it or not.

Another important factor in the future development of feed bank storage is the trend towards more specialization in farming, or less self-supported animal-producing units. Many animal feeding units purchase all their feed grains off the farm. If a local supply of feed grains is available, these specialists will expect this supply to be stored until they need it, thus eliminating the uneconomical importation of similar feed grains from other areas.

It is logical to assume that the larger storage facilities will perform this service of assembling adequate supplies of feed grains for the specialized feeding units. This is now being practiced in some of the concentrated swine producing areas of Ohio.

More Use of Contract

It is my opinion that the future will bring increased use of the contract in providing feeder service. Farmer-feeders are more aware of the risks than ever before, and contracting is a proven method of shifting the risks to other sources or individuals.

Improved harvesting methods have increased the risks of storing corn and raised the cost of preserving quality. The entire feeding program will become increasingly more complex in the future. It will require better training on the part of the managers of organizations performing this service. Simplified methods of cost accounting will become a necessity since margins will be lower.

I foresee nothing in the future that would cause a shift in the increased trend to grain bank operations. I expect that the grain and feed bank

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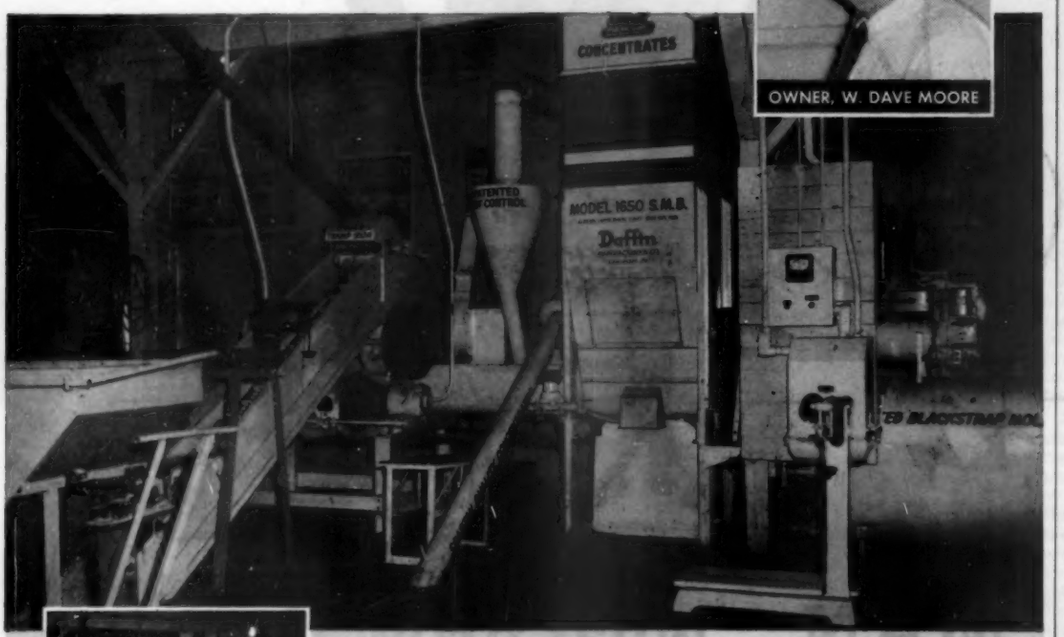

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will, in one form or another, be with us for a mighty long time.

I do not mean that the facilities now performing this service will necessarily have the same identity as they have at present. Local feed service facilities will serve larger areas than the present 5-to-10-mile radius now being served by most elevators.

If the elevators and feed mills continue to perform the grain bank service 10 or 25 years from now, it will be because they can do it cheaper than the farmer. I think they are the logical agency to perform this service, I think they will be equipped to do it, and I think they will rise to meet the challenge in the future.

Texas Reports on Pelleted Rations

YSLETA, TEXAS—Researchers at the El Paso Valley Experiment Station here report that steers fed a pelleted ration and those fed pelleted alfalfa hay with loose concentrates made equal gains in 1959 feeding tests. Both groups made more gain than a group fed a loose mixed ration.

The researchers also report that steers fed long or unground alfalfa hay with loose concentrates and those fed pelleted concentrates with ground alfalfa hay had a slight advantage in gain and carcass grade over steers fed the loose mixed ration.

Tests showed that a level of 62% of concentrates has a marked advantage in reducing the cost of gain and increasing the grade of steers over a level of approximately 40% concentrates.

The concentrate levels were compared with the pelleted and non-pelleted feed combinations of ground sorghum grain, cottonseed meal and ground and unground alfalfa hay.

Ogilvie Feed Sales Off, Earnings Up

MONTREAL—Ogilvie Flour Mills Co. has reported a new high in net profits for the year ended Aug. 31 despite the fact that feed division sales were off. Consolidated net profit for the year was $4,983,729, 36.3% above the previous year's $3,655,965.

The report states that the reason for the slump in mixed feed sales was the sharp reduction in demand for hog and poultry feed. However, the firm expects better sales of these products in 1961.

Flour sales of the firm showed increases and new records were set by starch, gluten and monosodium glutamate.

Income from grain elevators was higher even though they operated only part of the year and the company's share of earnings of non-consolidated subsidiaries improved.

It was reported that Lake of the Woods Milling Co. preferred shareholders have accepted the Ogilvie offer to purchase their shares for $130 per share. According to C. D. Howe, chairman, and A. Atkins, president, this will bring about closer integration of the two companies.

Announce New Terramycin Package

NEW YORK—A new package for Terramycin Animal Formula Soluble Powder was introduced recently by Chas. Pfizer & Co., Inc. The new transparent pack contains 6.4 oz. of the antibiotic formulation with enough Terramycin in each to treat 100 gal. of water at the level of one teaspoon to 2 gal. of water.

The unit packages are a new feature of the new 24.8 lb. drum now available through animal health dealers. "This completely soluble product has a high concentration of Terramycin for broad-range action against specific diseases of livestock and poultry," officials said.

Ohio Group Discusses Business Operations

CINCINNATI — Twenty-five members of the Cincinnati Feed Club heard and participated in an informative discussion of various phases of their business operations at a monthly dinner meeting recently at Shuller's Wigwam Restaurant.

With Chairman Lucian Garner of Quaker Oats Co., Lawrenceburg, Ind., presiding, the panelists and their subjects were: Edward C. Cohan, Merrill Lynch, Pierce, Fenner & Smith, commodity markets; Ray Fledderman, Archer-Daniels-Midland Co., market hedging, and Evans Harrell of Early & Daniel Co., terminal market buying and selling.

Mr. Fledderman was presented a desk set in appreciation for his services as chairman last year.

The club's annual Christmas party will be held Dec. 13 at Shuller's, when Santa Claus will distribute gifts to members and their wives.

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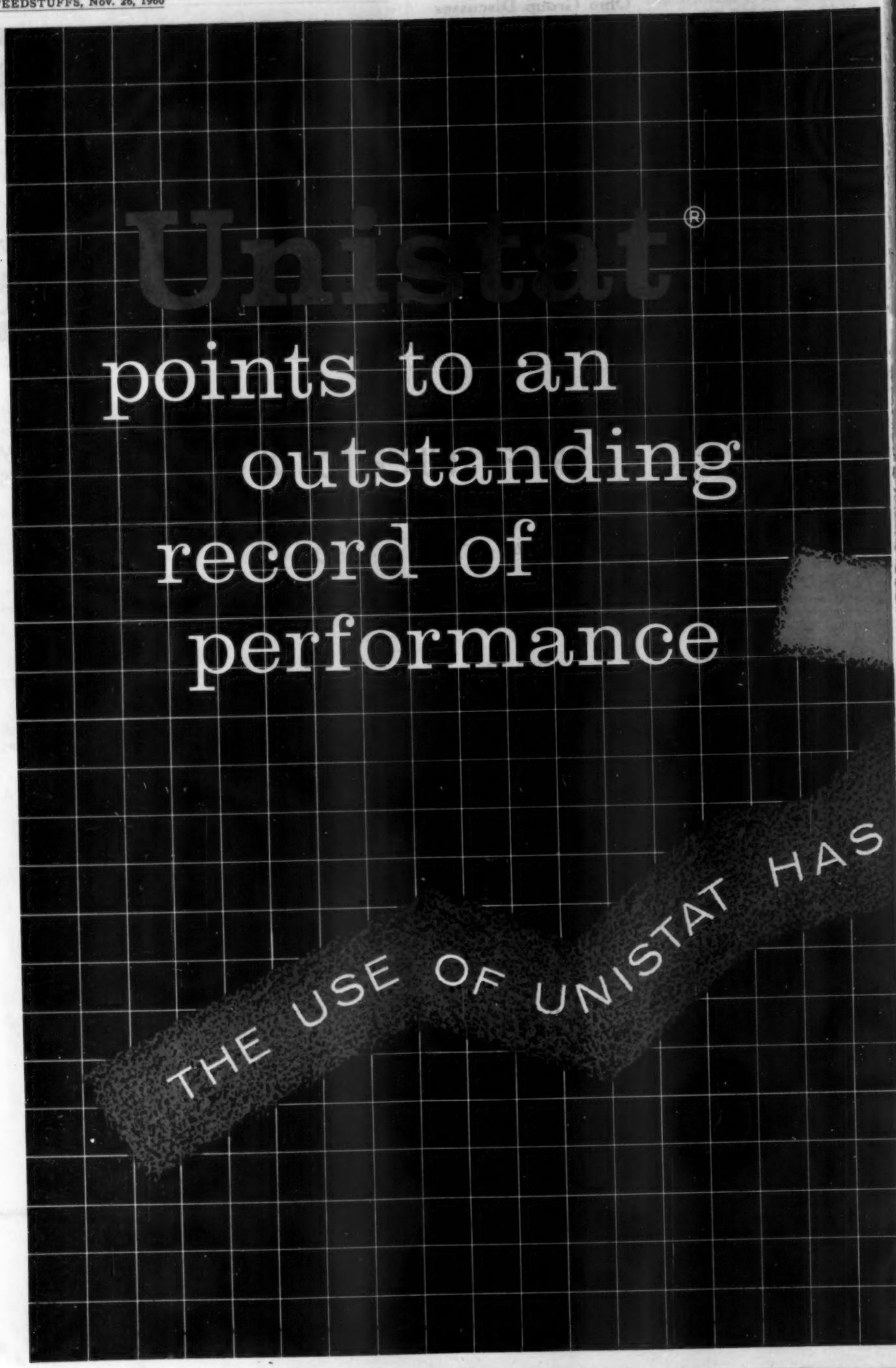
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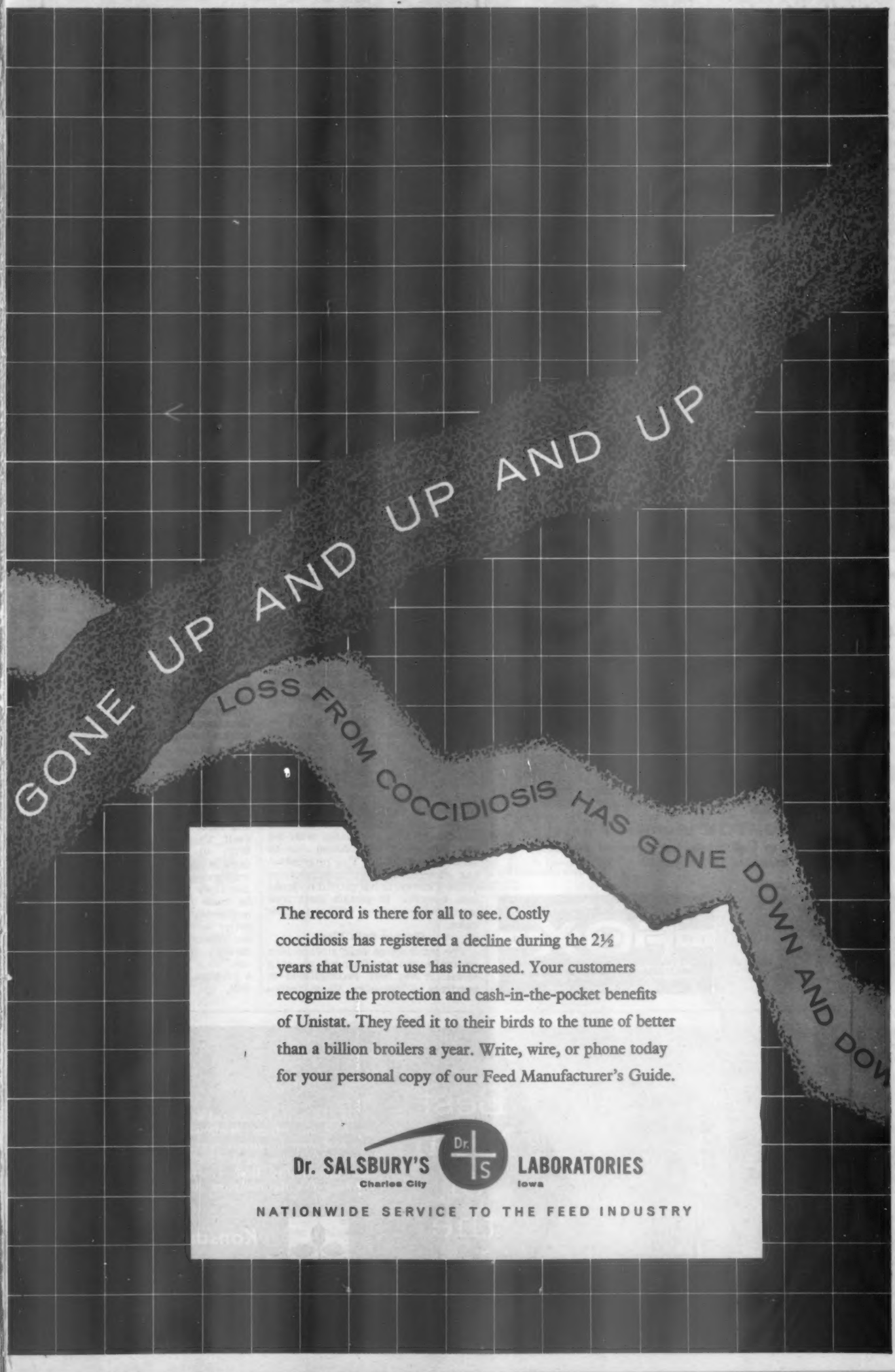

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NATIONWIDE SERVICE TO THE FEED INDUSTRY

Mill Modernization Can Cure Exasperation

By Al P. Nelson
Feedstuffs Special Writer

There are few feelings that bother a feed man more than the exasperation of seeing a long line of farm trucks with anxious owners waiting for grind and mix service and knowing how long they are going to have to wait because his equipment is slow and obsolete.

Installation of new, faster and more efficient equipment has often eliminated this exasperation for the feed man.

This is evidenced by the smiles that come over the faces of feed men when asked about their new facilities.

"They don't push us for service anymore," said one custom miller. "We turn out a grind and mix job here every 10-15 minutes. When you have one farmer dumping grain, another's grain grinding, and another's feed mixing, you've got a production line that farmers like."

I have also talked with many farmers bringing grist to custom mills before and after modernization. "Gosh, it's surprising how fast they can push a grind and mix order through," many a farmer has stated. "We don't have to wait very long now. It used to be terrible though."

However, installation of new equipment is not the complete answer. Just the other day I visited a custom mill in a dairying area. The owner had converted to bulk a year and a half before. When asked if his bulk volume had increased due to the change, he said, "Very little."

When I asked him why, he told me that his dairy farmers were very reluctant to install storage bins for bulk feed on their premises. "Someday they'll see they should do it," he said, "and until that time we'll take what bulk orders we can get and continue bagging our production."

Here was a problem for the feed man. Bulk feed production with his new equipment was slowed due to lack of storage bins. This retardation has occurred in many other sections of the country. It has proved no problem, however, to certain alert feed merchandisers, some willing to take risks.

Finance Bulk Bins

The purchase of bulk storage bins or tanks can be financed on easy terms. It has been accomplished in hundreds of instances. Many custom mills will finance bins for farmers; if the owners can't do it, they help farmers get loans from banks to do it. It is not difficult to show bankers that bulk feed will help some farmers operate more economically.

Some feed mill owners will sell a bulk tank to a farmer and charge him bag price for his bulk feed until the tank is paid for. Bagged feed certainly has its place in many situations, but if a farmer finds it to his advantage to use bulk, the financial investment in a storage bin or tank is not an insurmountable bottleneck.

I have seen cases where a feed mill has been modernized at considerable cost and not done much more business than before modernization. Why? Because in many instances owners sat back after modernization and expected business to flow in by itself. This does not always happen. With all modernizations, publicity, sales promotion, including follow-up, are necessary to carry the modernization story to the farmer. He needs to be made fully aware how this mill modernization will help him to get better balanced feed, quicker service, etc. When he is convinced of this, then he may give the mill his business on a 100% basis. There can be a problem with a newly modernized mill, too, unless management pro-

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motes its equipment advantage. In every business, there is always a variable factor—human management. New machinery does not negate the need for human direction.

Plant Tours

In some custom mills which are being erected today, management knows that customers, old and new, want to know details about equipment operation and materials flow. That is why such plants now have complete tours during the grand opening, handled by a competent mill man. Every piece of equipment is lettered to identify it and its capacity. Large material flow charts are posted in mill or warehouse and flow explained to the tour groups. Some firms even place large mill flow charts on farm supply store and office walls for customers to see.

Big new mills and their equipment and uses need to be sold to customers, too. If they aren't, there are apt to be problems, namely, lack of business.

If the feed dealer and custom mill operator does not keep a steady flow of vital, usable feeder educational material to his customers and prospects, a problem can develop, too. The modern farmer expects help constantly from his feed dealer. If he doesn't get it, he wonders what has developed to stop this flow to him. A large Wisconsin pig cooperative urges dealers selling to its pig producers to supply producers constantly with more nutritional and hog management information.

When a custom mill operator or regional feed manufacturer fails to take advantage of sales opportunities right on his doorstep, he is setting up a roadblock on his highway to cutting high costs and earning more profit. I have talked with at least 15 alert feed men in the past year who are selling molasses from their big storage tanks to portable and mobile mill operators in the area and making a good profit on the sales, too. Some manufacturers, too, regionally are using special trucks to haul molasses to dealers and making extra profit on the deal.

Profit Alertness

In other words there are individual, special sales and profit opportunities that are open to the alert feed man, whether he owns a feed store, a custom mill or whether he is a regional feed manufacturer. I know a custom mill operator who cheerfully grinds and mixes for some customers who have their own special favorite in concentrates (which they buy elsewhere). This dealer grinds and mixes on the theory that eventually he'll convert some of these customers to using his brand of concentrate. And he does. I also know some feed dealers who will absolutely not grind and mix for any farmer who wants to buy his concentrate elsewhere.

I talked some months ago with the owner of a South Dakota feed store, located on the main street of a small town of 3,000 persons. He had no custom mill—just a store. And he was doing a tremendous business on cattle concentrates. "We're out selling them all the time," he said. "There are three custom mills in town, so we wouldn't want to install another one. We push concentrate sales and some specialty items. We're doin' all right. With no custom mill work we can spend a lot of time out in the field every day, and leave one man to handle the store. I venture to say we spend four times as much time in the field as any other dealer in town. And we are selling a lot of feed."

It's a wise man who pushes his special lines, especially when he could be stymied by another bottleneck—such as lack of custom milling facilities.

Efficient feed plants, mechanical handling of feeds to and on farms, have cut time and high labor cost problems. Alert feed men who study their 1950 management programs will often find there were problems there, too, that needed eliminating or streamlining to permit profitable operations during the 1960's.

Cattle on Feed Up in California, Arizona

WASHINGTON—A total of 1,026,000 head of market cattle and calves were on feed Nov. 1 in Arizona and California, reports the U.S. Department of Agriculture.

This number is 7% higher than October 1 of this year and 10% above Nov. 1, 1959.

Market cattle and calves on feed in Arizona Nov. 1 totaled 243,000 head—up 20% from Oct. 1, but 2% lower than the 249,000 head on feed a year earlier.

Cattle and calves placed on feed in Arizona during October totaled 78,000 head—slightly below the 79,000 head in October last year. Marketings of fed cattle in this state amounted to 37,000 head during October compared with 35,000 head for the same month in 1959.

In California, cattle and calves on feed Nov. 1 totaled 783,000 head—up 3% from Oct. 1 and 14% higher than the 687,000 head on feed a year earlier. October replacements of cattle and calves on feed this year amounted to 174,000 head compared with 192,000 head during October, 1959. Marketings of California fed cattle amounted to 37,000 head during October compared with 141,000 head a year ago, USDA reports show.

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Formula Given for Feed Men with Driers

A corn drying formula for feed men with drier units was published recently in Grist from the Mill, publication of the Pennsylvania Millers & Feed Dealers' Assn. It was submitted by Mauser Lerch, Mauser Mill Co., Treichlers, Pa.

That formula is: Dry matter after drying is to the dry matter before drying as the original weight is to the final weight (X).

$$\frac{\text{100 Minus Moisture AFTER Drying}}{\text{100 Minus Moisture BEFORE Drying}} \text{ Equals } \frac{\text{Original Weight}}{\text{Final Weight (X)}}$$

Assume 50,000 lb. at 30 Moisture, dried to 15 moisture.

$$\frac{100-15}{100-30} = \frac{50{,}000}{X} \text{ or } \frac{85}{70} = \frac{50{,}000}{X} \text{ or } 85X = 50{,}000 \times 70 \text{ or } 85X = 3{,}500{,}000$$

$$\text{or } X = \frac{3{,}500{,}000}{85} = 41{,}176\ 40/85$$

The original weight was 50,000, the final weight will be 41,176 or a loss of 8,824 lb.

New way to Curb
CONDEMNATIONS!

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GALLIMYCIN
INJECTABLE

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JACK CARROLL COMPANY — North Little Rock, Arkansas
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FEED PRODUCTS, INC. — Denver, Colorado
KOCH POULTRY LABORATORIES — Santa Cruz, California
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STOCKLIN SUPPLY COMPANY — Seattle, Washington
VAN WATERS & ROGERS, INC. — Los Angeles, California; San Francisco, California; Turlock, California; Portland, Oregon; Salt Lake City, Utah; Seattle, Washington
VETERINARY SUPPLY CO. — Modesto, California

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Here's proof... new GALLIMYCIN Injectable Cuts Condemnation Losses... Helps Protect Flocks Against C-R-D Breaks!

Large-scale field trial tests* involving thousands of birds have proven GALLIMYCIN Injectable highly effective in protecting flocks from C-R-D breaks! Baby chicks were injected with just 5 mg. (0.1-cc) GALLIMYCIN attempting to free them from PPLO, main cause of C-R-D. Results . . .

1. Condemnations were reduced to ⅛ of 1% in injected group. Other tests showed condemnations cut to .8% compared to 6.1% in non-injected controls. Figure the savings for yourself!

2. Birds injected with GALLIMYCIN weighed an average of .21 lbs. more than non-injected control birds. Extra profit over feed and medication costs was $35. per 1,000 birds, based on a 19¢ market.

And practical field tests prove GALLIMYCIN Injectable is economical! It costs less than ½ cent to inject baby chicks up to 1-lb. Easy to use . . . no measuring, no mixing . . . no fuss or bother. Supplied in 250-cc. bottles, enough to treat 2,500 baby chicks.

*Complete 1960 data and names available on request. 6000581-R

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THIN SHELLS

(Continued from page 36)

problem of thin shells is not solved. The complexity of the problem requires that the experimental approach include imaginative but careful thoughts. Many basic problems need to be solved involving such factors as acclimatization to environmental change and the physiological and biochemical changes which may accompany such adjustments. Certainly the scientific challenge plus the economical importance of the problem should provide the necessary stimuli for future research in this area.

v v

REFERENCES

Asmundson, V. F., and Pinsky, P., 1935—The effect of the thyroid on the formation of the hen's egg; Poultry Sci., 14:99.

Berg, L. R., and Bearse, G. E., 1951—Effect of iodinated casein and thiouracil on the performances of laying birds; Poultry Sci., 30:21.

Bourne, G. H., 1942—Quart. J. Expti. Physiol., 31:319, as reported by Bourne, G. H., 1956.

Brunt, A. W., Otte, A. W., and Chin, C., 1953—A survey of egg quality at two egg-laying tests; Technical Bul. No. 1066, USDA.

Conrad, R. M., 1939—The effect of high temperature on the blood calcium of the laying hen; Poultry Sci., 18:327.

Deeb, S. S., and Thornton, P. A., 1959—The stability of vitamin C in dry poultry mash; Abstract, 48th Annual Meeting, Poultry Sci. Assoc., 1959.

Fish, E. W., and Harris, L. J., 1934—Phil. Trans. Roy. Soc., B, 223:489, as reported by Bourne, B. H., 1956.

Goldfine, C. R., 1956—The effect of elevated environmental temperature on ascorbic acid excretion of the albino rat; Master's thesis, University of Arizona.

Gould, B. S., and Woessner, J. F., 1956—The influence of ascorbic acid on the proline, hydroxyproline, glycine and collagen content of regenerating guinea pig skin; J. Biological Chemistry, 226:289.

Gutteridge, H. S., and Pratt, J. M., 1946—The effect of vitamins D_2 and D_3 in fish oils and iodocasein on shell quality; Poultry Sci., 25:39.

Hart, C., and Lessing, O., 1913—Der skorbut der kleinern kinderm. Euke. As reported by Bourne, G. H., 1956.

Hoffman, E., and Wheeler, R. S., 1948—The value of thyro-protein in starting, growing and laying rations IV; Poultry Sci., 27:509.

Ichihara, K., 1954—Ascorbic acid and protein metabolism; J. Vitaminology 1:55.

National Research Council, 1954—Nutrient requirements for poultry; Publication 301.

Patterson, I., and Bourquin, A., 1943—Further studies on the relationship between the composition on the diet and the metabolism of ascorbic acid; Am. J. Digest, Dis., 10:390.

Pepper, W. F., Winget, C. M., and Slinger, S. J., 1960—Influence of calcium and ascorbic acid on egg quality; Abstracts, 49th Annual Meeting, Poultry Sci. Assoc., 1960.

Petersen, C. F., Sauter, E. A., Wiese, A. C., and Lumijarvi, D. J., 1959—Influence of calcium and other nutrients upon shell quality of high producing White Leghorn hens; Abstracts, 48th Annual Meeting, Poultry Sci. Assoc., 1959.

Ralston Purina Co., 1957—Thin shelled eggs, a problem; Nutrition News Review, 13: No. 4.

Robertson, W. V., Hiwett, J., and Herman, C., 1959—The relation of ascorbic acid to the conversion of proline to hydroxyproline in the synthesis of collagen in the carrageenan granuloma; J. Biol. Chem., 234: 105.

Samuels, L. T., 1943—The relation of ascorbic acid metabolism in the rat to diets high in protein, carbohydrate or fat; J. Nutrition, 26:205.

Squibb, R. L., Gusman, M. A., and Scrimshaw, N. S., 1954—Effect of high environmental temperatures on metabolism; J. Biol. Chem., 153:285.

Thornton, Paul A., 1960—The effect of dietary calcium level on the efficiency of ascorbic acid in maintenance of egg shell thickness at increased environmental temperatures; Abstracts, 49th Annual Meeting, Poultry Sci. Assoc., 1960.

Thornton, Paul A., 1960—Unpublished data, Colorado State University, Fort Collins, Colo.

Thornton, Paul A., 1960—In press.

Thornton, P. A., and Moreng, R. E., 1958—The effect of ascorbic acid on egg quality factors; Poultry Sci., 37:691.

Thornton, P. A., and Moreng, R. E., 1959—Further evidence on the value of ascorbic acid for maintenance of shell quality in warm environmental temperature; Poultry Sci., 38:594.

Warren, D. C., and Schnepel, R. L., 1939—The effect of air temperatures on egg shell thickness in the fowl; Poultry Sci., 19:67.

Wilhelm, L. A., 1940—Some factors affecting variations in egg shell quality; Poultry Sci., 19:246.

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Poultry Pathologists Hear Nutrition Talks At Pennsylvania Event

UNIVERSITY PARK, PA.—Views of two nutritionists in the realm of how nutrition affects poultry health were heard here recently during the second semi-annual meeting of Pennsylvania Poultry Pathologists.

The guest nutritionists were Dr. A. C. Groschke, Eastern States Laboratory, Ellington, Conn., and A. L. Kish, Pennsylvania Farm Bureau, Manheim, Pa.

Dr. Groschke reported findings in basic nutritional research and Mr. Kish talked about the practical side of poultry nutrition in relation to poultry health.

In other sessions of the meeting, pathologists discussed diagnostic problems and considered the establishment of standard methods of diagnosis for a number of poultry diseases. Also, the ultra-violet microscopic method of diagnosing virus and bacterial diseases was reviewed. This type of microscope will be added to laboratory equipment following development of final technique details.

Antibiotics

Dr. Groschke's discussion included a report of research results indicating the advantages and disadvantages of antibiotics in poultry feed. "Certain reactions may take place at times within the bird to cause the opposite effect from what was intended," he said. "Prolonged use at higher levels and overdosage could cause this type of reaction."

Dr. Groschke discussed toxic substances found in certain types of poorly processed fish meal and their disabling effect on turkeys. He also emphasized the growing importance of chemical substances known as steroids in poultry feeds. Steroid research reports show both good and harmful effects on the health of birds depending on the types of steroids and the quantity present in feeds, he said. Dr. Groschke also told of a substance being developed to produce an anti-fermentation effect in litter.

All-Mash Feeding

Mr. Kish said a strong trend toward all-mash feeding has developed, mainly because of automation, bulk feeding methods and other labor-saving devices.

"All-mash feeding has reduced the occurrence of vices such as picking, egg eating and fighting," he reported. "The birds' time is fully occupied by feeding on the all-mash ration."

Mr. Kish also reported that an on-the-farm mixing trend was developing in Pennsylvania.

Mr. Kish said high fiber feed for restricted growth of light bird pullets did not produce satisfactory results for Farm Bureau flocks. At present he is recommending this program for heavies only.

Other nutritional factors involving poultry disease reported by Mr. Kish were the effects of feed on shell quality and of antibiotics at low levels on birds.

Calcium gluconate added to feed was found to have variable response in degree of shell quality, whereas the addition of higher levels of limestone up to 3 to 3½% produced a more steady response. Here Mr. Kish pointed out that "it is rather obvious that limestone addition has definite limitations due to the problem of its bulk and weight." Shell quality is also greatly influenced by the level of phosphorus in a ration due to its nutritional interaction in relation to the level of available calcium, he reported.

"Continuous low level antibiotics and some antibacterial chemicals produced no observable response in egg production in layers," Mr. Kish reported. "The levels in these trials were 20 gm. per ton or lower. The only difference was the increased cost of producing eggs. The arsenicals, however, produced good growth and health response on floor-fed birds when given as directed on a continuous basis at 90 gm. per ton. No noticeable response from arsenicals was noticed in cage birds."

Many Unsolved Problems

Dr. Groschke and Mr. Kish indicated that many problems remain unsolved in animal nutrition. Both commented on the problem of "pale-appearing" birds and reported that a definite solution still hasn't been found.

They reported some of the problems in basic nutritional reactions of chemical nature that take place in the bird's digestive tract. Also, they noted that many external environmental stresses have a great influence on the digestion process. Many diseases of mild to severe nature, they said, have varied degrees of influence on the nutrition of growing birds.

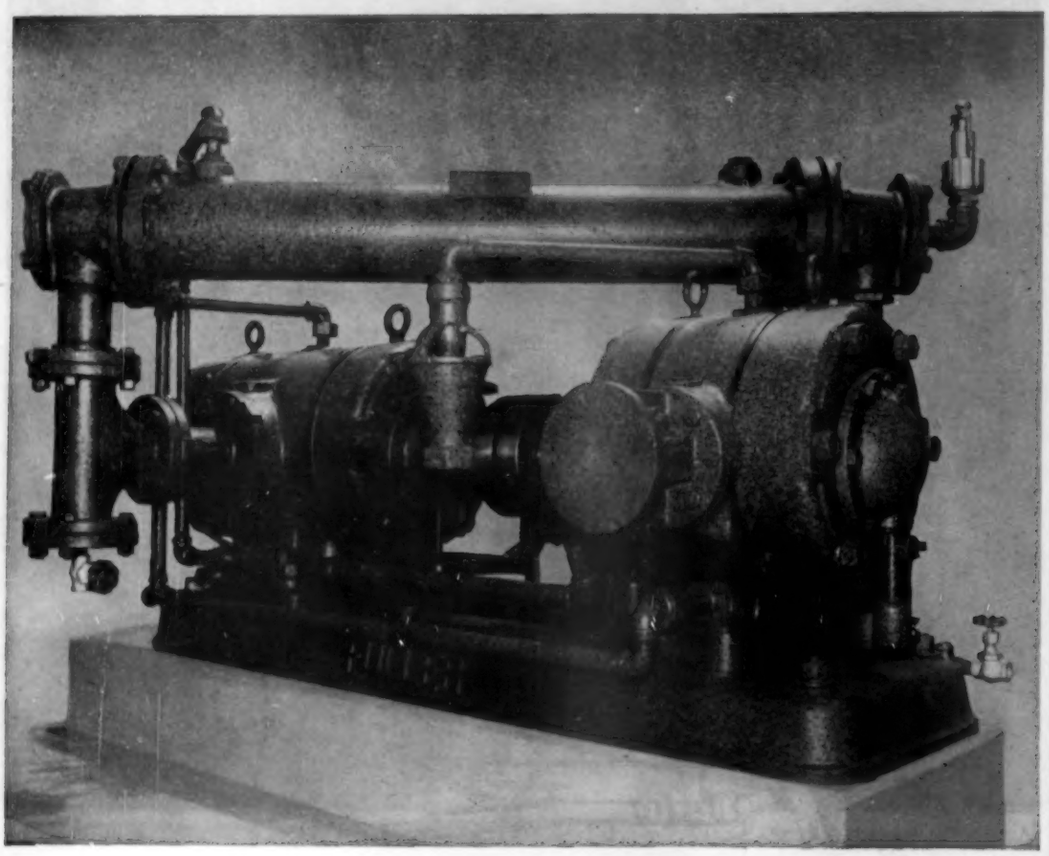
It was evident at the meeting that growing cooperation among nutritionists, biochemists and veterinary pathologists will go a long way toward solving many of the remaining nutrition problems.

FEED CUSTOMER PSYCHOLOGY PAYS OFF

WINDHAM, N.H.—One independent eastern feed man uses a little customer psychology by imprinting the flock owner's name, as well as the farm name, in large letters at the top of hand-out egg record charts. Only the best customers get their egg record personalized.

"It's good business," he explains. "Customers like to see their names in print and it makes them feel important."

The extra printing cost is minor as he has a large number printed at one time, and hands out the personalized cards to individual flock owners as required, from his large supply stock.



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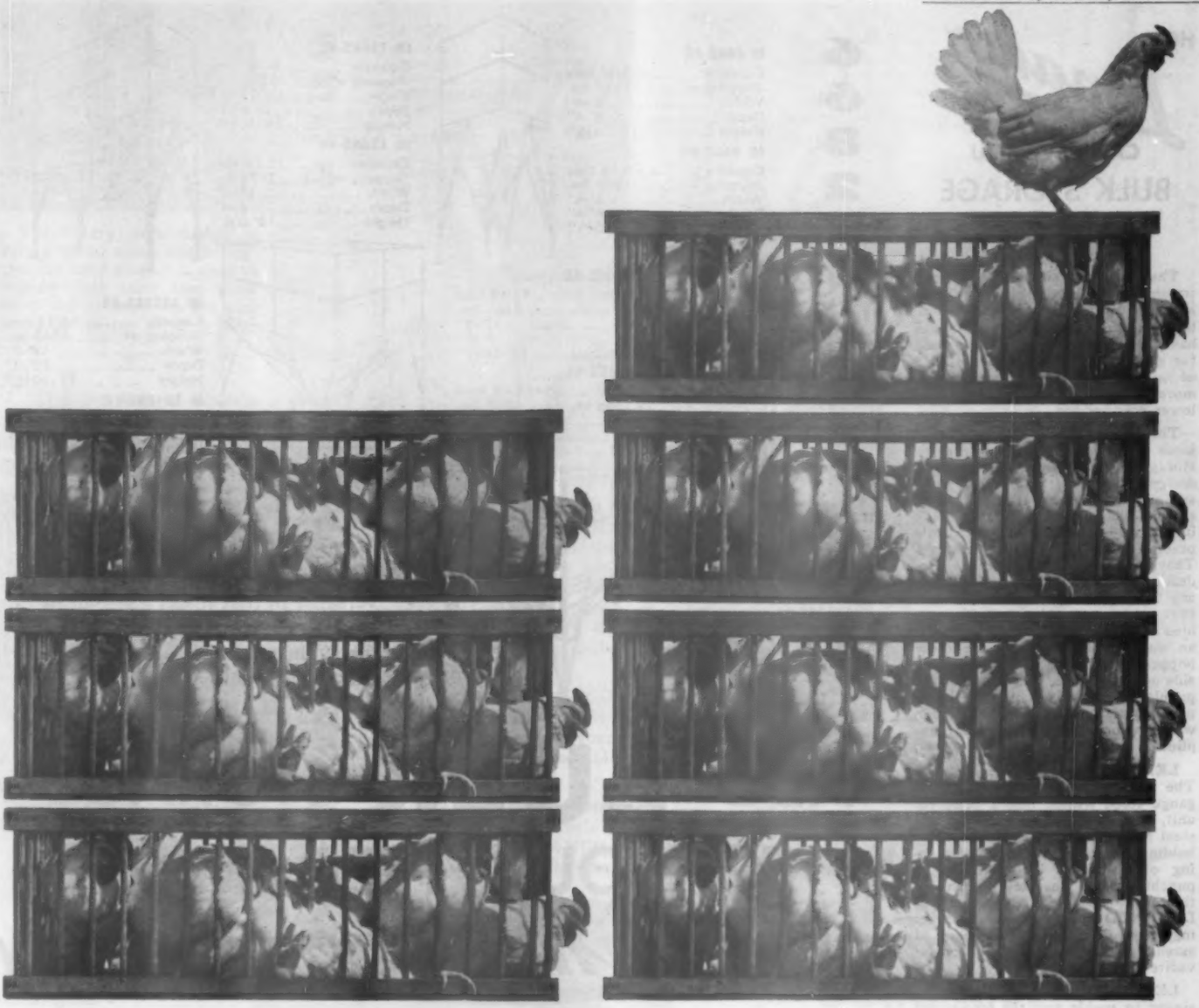

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1.36 International Units of vitamin E activity

The label on a feed bag doesn't tell the whole story if it lists vitamin E as so many "milligrams of alpha-tocopheryl acetate."

That's because there is a 36% difference in vitamin E effect between the "*dl*" form of alpha-tocopheryl acetate and the "*d*" form.

The "*d*" form is 1.36 times more potent. And "*d*" is the kind that occurs naturally in growing plants.

Because of this difference, it's a good idea, when formulating or labeling feeds, to count your vitamin E in International Units. Then you're sure.

It's an even better idea to be sure your feeds contain adequate levels of vitamin E in a form that delivers all the activity nature puts into it, and is rock-stable besides. The way to do it is with *Myvamix*® Vitamin E. It costs only a few dimes per ton of feed. For information and a quotation, write ***Distillation Products Industries,*** Rochester 3, N. Y. Sales offices: New York and Chicago • Charles Albert Smith Limited, Montreal and Toronto.

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BULK STORAGE

QUICKLY

The revolution sweeping the country in the feeding industry is affecting feed mills all over the nation, both large and small. Many problems have arisen; among them the need for additional bulk storage, the need of saving labor, and the need to get more volume through the mill at lower cost per ton.

The square bins illustrated are some of the ways you can add extra storage in your plant. These bins are designed complete with rotary gates and supports for a weigh buggy operation. The minimum 60° slope built into most of these bins will handle practically all hard-to-flow materials. They are also available without legs, designed to set on your structural at any height. The No. 7682 or the No. 6682 can be mounted as bulk load-out bins either with a shed roof, or as an outside installation, since these hoppers can be made for either inside or outside use. Where one of the popular pneumatic units is being used, an air top is available. Outside weatherproof tops can also be supplied.

LEMANCO bins are prefabricated. The hoppers are constructed of 14-gauge steel, welded into a complete unit, the sides 16-gauge galvanized steel reinforced and gang punched in holding jigs to assure proper matching of all holes. This method of punching holes plus close control of tolerance in the fabrication of LEMANCO hoppers, legs and bracing, pays dividends in the ease of assembly by your own labor or favorite millwright.

LEMANCO storage bins are designed to enable you, the feed mixer or feed manufacturer, to install with small labor cost bins of proper pitch and suitable capacity. The use of common wall construction in grouping two or more hoppers together reduces labor and material costs.

You can save labor in operation by using LEMANCO bins with a LEMANCO weigh buggy or by filling a weigh hopper with an auger, thus getting ingredients into mixer in less time with less labor. You can, also, use these same type bins as finished feed storage, either mounted on structural as an overhead bulk load-out or, as many are doing, auger direct from the finished feed tank into the truck.

You can order these bins with full assurance that they are quality built and can be easily erected by you or your contractor. If in measuring your space you find the particular bin you need is too high, the sides can be adjusted on special order to fit your requirements. Where augers are attached, the bins can be lowered allowing you to add additional height for greater capacity.

The LEMANCO system is so flexible in application that it is impossible to detail every possibility. If you have difficulty in fitting one of these bin arrangements in your mill space or storage area, a phone call to our engineering department may assist you.

Write or telephone today for price list. Shipment can be made promptly.

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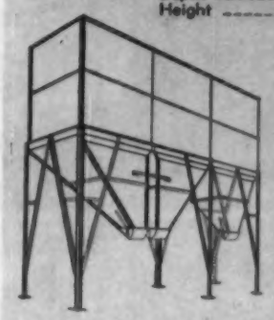
6682

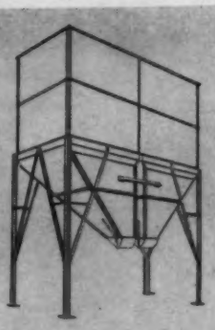
IB 6682-42
Capacity ..... 4.06 tons
Shipping wt. ..... 1547 lbs.
Width ..... 6'-4"
Depth ..... 6'-4"
Height ..... 14'-10½"

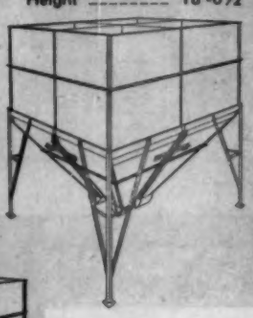
IB 6682-84
Capacity ..... 6.06 tons
Shipping wt. ..... 1863 lbs.
Width ..... 6'-4"
Depth ..... 6'-4"
Height ..... 18'-0½"



IB 12682-42
Capacity ..... 8.12 tons
Shipping wt. ..... 2564 lbs.
Width ..... 12'-0"
Depth ..... 6'-4"
Height ..... 14'-10½"

IB 12682-84
Capacity ..... 12.12 tons
Shipping wt. ..... 3123 lbs.
Width ..... 12'-0"
Depth ..... 6'-4"
Height ..... 18'-0½"





IB 18682-42
Capacity ..... 12.18 tons
Shipping wt. ..... 2461 lbs.
Width ..... 17'-8"
Depth ..... 6'-4"
Height ..... 14'-10½"

IB 18682-84
Capacity ..... 18.18 tons
Shipping wt. ..... 4263 lbs.
Width ..... 17'-8"
Depth ..... 6'-4"
Height ..... 18'-0½"

IB 121282-42
Capacity ..... 16.24 tons
Shipping wt. ..... 3840 lbs.
Width ..... 12'-0"
Depth ..... 12'-0"
Height ..... 14'-10½"

IB 121282-84
Capacity ..... 24.24 tons
Shipping wt. ..... 4790 lbs.
Width ..... 12'-0"
Depth ..... 12'-0"
Height ..... 18'-0½"

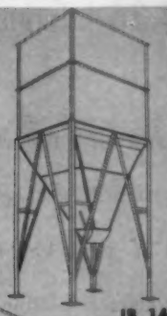
IB 181282-42
Capacity ..... 24.36 tons
Shipping wt. ..... 5672 lbs.
Width ..... 17'-8"
Depth ..... 12'-0"
Height ..... 14'-10½"

IB 181282-84
Capacity ..... 36.36 tons
Shipping wt. ..... 7019 lbs.
Width ..... 17'-8"
Depth ..... 12'-0"
Height ..... 18'-0½"

The No. 6682 hopper has a minimum pitch of 60° and is additionally versatile in that it has a side draw or a corner draw base. This makes possible a cluster of bins utilizing either draw to best suit your mill conditions.

ADD BULK STORAGE TO YOUR FEED MILL WITH *Lemanco* QUALITY PREFABRICATED STEEL BINS

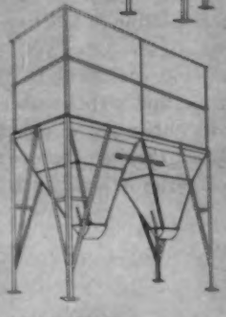
7682



IB 7682-48
Capacity ..... 4.92 tons
Shipping wt. ..... 1608 lbs.
Width ..... 7'-4"
Depth ..... 6'-4"
Height ..... 15'-4½"

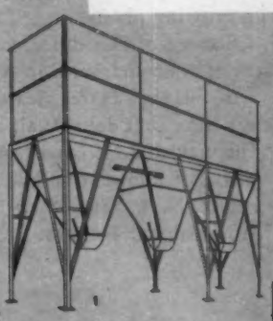
IB 7682-96
Capacity ..... 7.65 tons
Shipping wt. ..... 1878 lbs.
Width ..... 7'-4"
Depth ..... 6'-4"
Height ..... 19'-0½"

The No. 7682 hopper with its minimum 60° pitch and side draw is extremely popular due to its larger capacity. This hopper can be joined with the No. 6682 hopper under certain conditions.



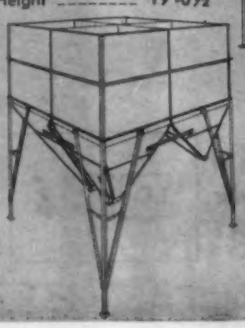
IB 14682-48
Capacity ..... 9.84 tons
Shipping wt. ..... 2961 lbs.
Width ..... 14'-0"
Depth ..... 6'-4"
Height ..... 15'-4½"

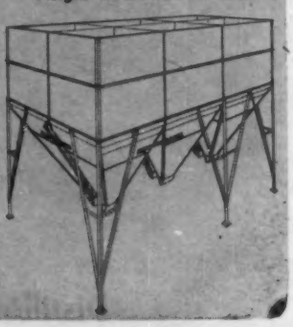
IB 14682-96
Capacity ..... 15.3 tons
Shipping wt. ..... 3605 lbs.
Width ..... 14'-0"
Depth ..... 6'-4"
Height ..... 19'-0½"



IB 21682-48
Capacity ..... 14.76 tons
Shipping wt. ..... 3028 lbs.
Width ..... 20'-8"
Depth ..... 6'-4"
Height ..... 15'-4½"

IB 21682-96
Capacity ..... 22.95 tons
Shipping wt. ..... 4096 lbs.
Width ..... 20'-8"
Depth ..... 6'-4"
Height ..... 19'-0½"





IB 141282-48
Capacity ..... 19.68 tons
Shipping wt. ..... 3871 lbs.
Width ..... 14'-0"
Depth ..... 12'-0"
Height ..... 15'-4½"

IB 141282-96
Capacity ..... 30.6 tons
Shipping wt. ..... 5026 lbs.
Width ..... 14'-0"
Depth ..... 12'-0"
Height ..... 19'-0½"

IB 211282-48
Capacity ..... 29.52 tons
Shipping wt. ..... 5724 lbs.
Width ..... 20'-8"
Depth ..... 12'-0"
Height ..... 15'-4½"

IB 211282-96
Capacity ..... 45.9 tons
Shipping wt. ..... 7390 lbs.
Width ..... 20'-8"
Depth ..... 12'-0"
Height ..... 19'-0½"

The rotary gate design is very popular when weigh buggies are used since it is easy to dribble feed with this gate. Rack and pinion gates are also available for any of these bins.

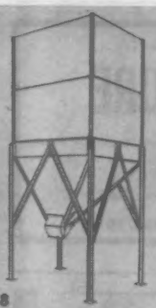
•

* The bin height shown on both pages includes 42-inch clearance under rotary gate.

5554

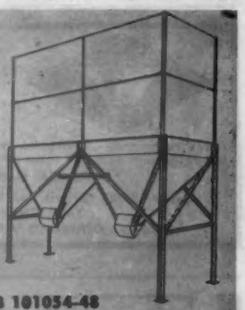
IB 5554-48
Capacity ..... 3¾ tons
Shipping wt. ..... 1060 lbs.
Width ..... 5'-3"
Depth ..... 5'-3"
*Height ..... 12'-10"

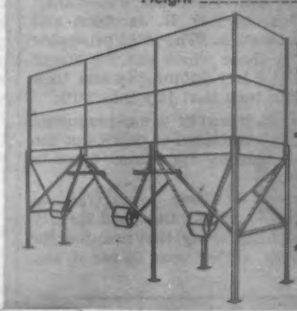
IB 5554-96
Capacity ..... 5 tons
Shipping wt. ..... 1200 lbs.
Width ..... 5'-3"
Depth ..... 5'-3"
*Height ..... 16'-6"



IB 10554-48
Capacity ..... 6¾ tons
Shipping wt. ..... 1850 lbs.
Width ..... 10'-0"
Depth ..... 5'-3"
*Height ..... 12'-10"

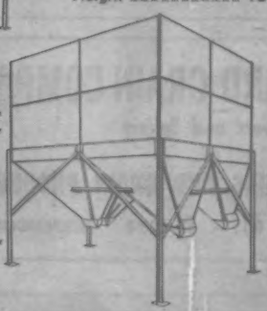
IB 10554-96
Capacity ..... 10 tons
Shipping wt. ..... 2000 lbs.
Width ..... 10'-0"
Depth ..... 5'-3"
*Height ..... 16'-6"





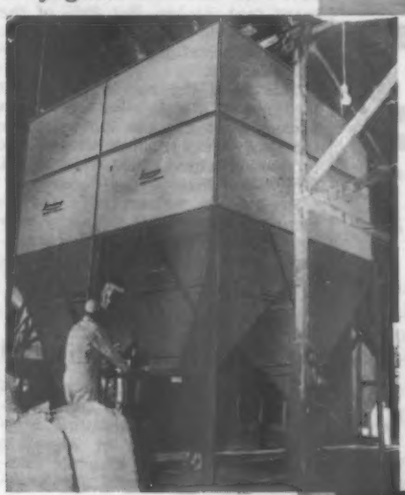
IB 15554-48
Capacity ..... 10 tons
Shipping wt. ..... 2300 lbs.
Width ..... 14'-9"
Depth ..... 5'-3"
*Height ..... 12'-10"

IB 15554-96
Capacity ..... 15 tons
Shipping wt. ..... 2800 lbs.
Width ..... 14'-9"
Depth ..... 5'-3"
*Height ..... 16'-6"



IB 101054-48
Capacity ..... 13½ tons
Shipping wt. ..... 2800 lbs.
Width ..... 10'-0"
Depth ..... 10'-0"
*Height ..... 12'-10"

IB 101054-96
Capacity ..... 20 tons
Shipping wt. ..... 3200 lbs.
Width ..... 10'-0"
Depth ..... 10'-0"
*Height ..... 16'-6"



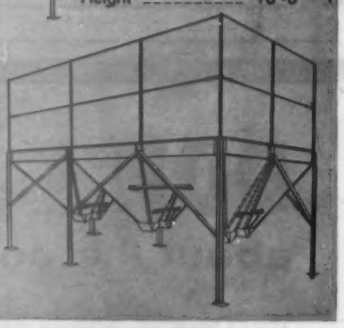
These **LEMANCO** bins, with their common wall construction, and either one or two tiers of sides, can fit into most any feed mill to give safe, economical bulk storage of feed and ingredients. Their open top permits ease of checking contents and filling to capacity.

The various **LEMANCO** bin sizes make it possible to fit additional bulk storage into your mill quickly, easily, and economically, using less floor space.

Mobile mill operators are finding additional use for their equipment by using **LEMANCO** storage bins with a portable auger.

IB 151054-48
Capacity ..... 20¼ tons
Shipping wt. ..... 3750 lbs.
Width ..... 14'-9"
Depth ..... 10'-0"
*Height ..... 12'-10"

IB 151054-96
Capacity ..... 30 tons
Shipping wt. ..... 4400 lbs.
Width ..... 14'-9"
Depth ..... 10'-0"
*Height ..... 16'-6"



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GADSDEN, ALABAMA

These bins are especially designed for use with weigh buggies and are adaptable where several hoppers are needed in limited space.

The No. 5554 hopper has a minimum pitch of 45° in the back. The other three sides are 60° or more. As the gate on this bin is manually operated, bridging is a minor problem. Hoppers are all side draw.

The No. 5564 hopper is available as either a side or corner draw hopper. It has a minimum pitch of 60° on two sides and the other two are practically vertical. This hopper can be incorporated in a cluster with the No. 5554 where it is advantageous to do so, keeping in mind that the No. 5564 hopper is approximately 10" lower than the No. 5554. The 60° pitch and the corner draw practically insure flow of any type ingredient.

•

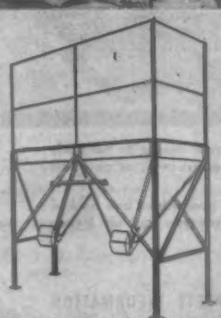
The **LEMANCO** weigh buggy comes in two sizes: Model 890, capacity 890 lbs. @ 40 lbs. per cubic foot and Model 1280, capacity 1280 lbs. @ 40 lbs. per cubic foot. The scale capacity on each is 1300 lbs. The low scale post permits the **LEMANCO** weigh buggy to be pushed under a cluster of bins to the second or third row of hoppers.

Write for prices.

5564

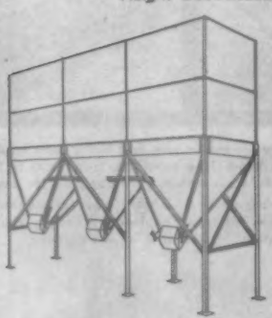
IB 5564-48
Capacity ..... 3¾ tons
Shipping wt. ..... 1100 lbs.
Width ..... 5'-3"
Depth ..... 5'-3"
*Height ..... 13'-8"

IB 5564-96
Capacity ..... 5 tons
Shipping wt. ..... 1250lbs.
Width ..... 5'-3"
Depth ..... 5'-3"
*Height ..... 17'-4"



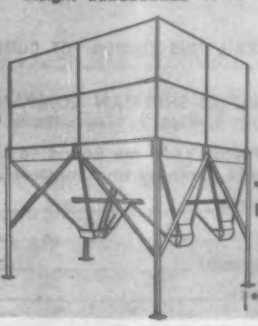
IB 10564-48
Capacity ..... 6¾ tons
Shipping wt. ..... 1950 lbs.
Width ..... 10'-0"
Depth ..... 5'-3"
*Height ..... 13'-8"

IB 10564-96
Capacity ..... 10 tons
Shipping wt. ..... 2100 lbs.
Width ..... 10'-0"
Depth ..... 5'-3"
*Height ..... 17'-4"



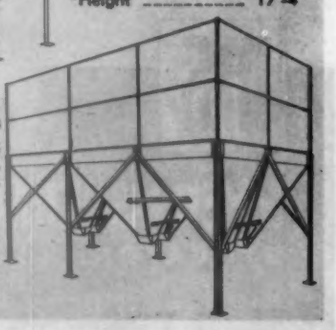
IB 15564-48
Capacity ..... 10 tons
Shipping wt. ..... 2300 lbs.
Width ..... 14'-9"
Depth ..... 5'-3"
*Height ..... 13'-8"

IB 15564-96
Capacity ..... 15 tons
Shipping wt. ..... 2800 lbs.
Width ..... 14'-9"
Depth ..... 5'-3"
*Height ..... 17'-4"



IB 101064-48
Capacity ..... 13½ tons
Shipping wt. ..... 3200 lbs.
Width ..... 10'-0"
Depth ..... 10'-0"
*Height ..... 13'-8"

IB 101064-96
Capacity ..... 20 tons
Shipping wt. ..... 3400 lbs.
Width ..... 10'-0"
Depth ..... 10'-0"
*Height ..... 17'-4"



IB 151064-48
Capacity ..... 20¼ tons
Shipping wt. ..... 3950 lbs.
Width ..... 14'-9"
Depth ..... 10'-0"
*Height ..... 13'-8"

IB 151064-96
Capacity ..... 30 tons
Shipping wt. ..... 4600 lbs.
Width ..... 14'-9"
Depth ..... 10'-0"
*Height ..... 17'-4"

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Scientists Study Factors Influencing Dairy Cow Appetites

LEXINGTON, KY. — An unknown factor, or factors, in a cow's makeup causes some animals to eat more than others, report University of Kentucky researchers. And these unknowns are something other than body weights, barrel sizes or milk production.

"These differences are important," say researchers D. R. Jacobson and Donald Dowden. "The most profitable cows are those which eat the larger amounts of hay voluntarily and then efficiently turn that hay into milk."

Here is a report of two experiments these men conducted to check out the possible reasons for these appetite differences

Nineteen Holstein cows (all in milk) were fed all the good quality chopped alfalfa hay they wanted for five weeks. Object was to see if any of the three factors mentioned above —body weight, milk production or barrel circumference—accounted for variations in feed intake.

"There is some correlation," they say. "Some of the increase in hay intake was caused by larger barrel circumferences, or higher body weights or higher milk production. But these three factors together only accounted for about one-third of the higher feed intake."

One cow, for instance, ate 27.5 lb. of dry matter (about 88% of new hay by weight) a day, gave 24.6 lb. of milk daily, weighed 1,060 lb. and had a barrel circumference of 88 in. But another cow (to use an extreme example) weighed some 20 lb. less, had the same barrel circumference, and produced 29.6 lb. of milk daily—but ate 43.4 lb. of dry matter a day, nearly double the amount eaten by the other cow.

The researchers express these findings another way. They have found that higher body weights, barrel circumference or milk production does have some connection with higher or lower feed intakes. But 69% of the higher or lower food intake was caused by something other than these three factors.

This leads the researchers therefore into an investigative area which asks: "What are the factors other than body weight, barrel size or milk production which cause cows to eat large or small amounts of forage?"

Preliminary findings in a experiment at University of Kentucky indicate there are physiological mechanisms in cows that control appetite. These findings will be available soon.

DON'T KID YOURSELF

about the cost of building a new mill . . .

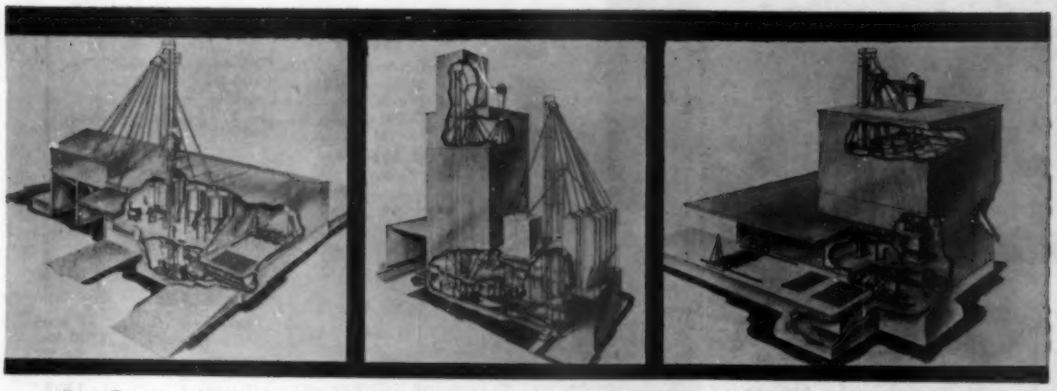
There's more than meets the eye in any mill construction project. Most people tend to think only in terms of the major pieces of equipment and the structure which houses them. That's why they rely on reputable engineers and contractors to plan each detail for them and furnish comprehensive cost quotations.

Unfortunately, some mill owners have found to their regret that the low bids they accepted from some contractors were low only because they were incomplete. The addition of such vital things as complete wiring and ductwork, motor starters, air cylinders, and countless other "minor" items sky-rocketed their costs after it was too late to do anything about them.

You wouldn't think of buying a new car without a starter, spark plugs, generator, or other similar equipment. But people actually do buy mills under much the same conditions, only to find out that they must come up with extra money before the mill will even run.

You can avoid this danger completely by asking us to bid on your next mill construction, expansion, or modernization project. All Myers-Sherman feed plants are engineered complete to every last detail . . . and *quoted* that way, too!

Best of all, this simple protection costs you nothing. We'll be glad to discuss your project with you, survey your requirements, and furnish recommendations without any obligation. Send for our free booklet that tells you all about our complete services today.



Myers-Sherman engineering experts create new and better mills of every type and size . . . from small custom mixing to full-scale manufacturing operations. We handle the entire job from start to finish . . . engineering, financing, and construction, or any part of it you wish. Choose one of 54 convenient purchase plans or even lease the entire installation!

Best of all, the quality and workmanship of every piece of Myers-Sherman equipment you operate is fully guaranteed and backed by the Myers-Sherman reputation for sound engineering design, quality workmanship and construction. When you call on Myers-Sherman you can count on getting the best mill for the money.

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Marketing Assistant At American Cyanamid

NEW YORK—The appointment of Patrick M. O'Connor as administrative assistant to the marketing director of American Cyanamid Company's Agricultural Division was announced by E. H. Smythe, division director of marketing.

P. M. O'Connor

Mr. O'Connor joined Cyanamid in 1952 as a budget accountant and has held several responsible positions in the budgets and statistics departments of various company divisions. In 1958, he became manager of budgets for the agricultural division. Prior to joining Cyanamid he was an accountant with Sunshine Biscuits, Inc., of Long Island City, N.Y.

He is a graduate of St. John's University where he received his B.A. degree with a major in accounting. Prior to this, he served three years with the U.S. Marine Corps.

SWISHER FRANCHISE MILLS

DANVILLE, ILL.—Four independent feed mills have announced their affiliation with the Swisher Feed Division of the Wm. Davies Co., Inc., Danville, Ill. Two of these mills are Muhlenberg Co. Hatchery, Central City, Ky., and Valley Feed Co., Beaumont, Ky., which represent the first Swisher Feed Service franchise mills in this state. Robert Freeman, sales manager of the firm, also announces that two other mills have joined the Swisher franchise arrangement. They are Dippold Bros., Edwardsville, Ill., and Ging Grain & Feed Co., Rushville, Ind. All mills use Swisher "super concentrates" together with locally obtained grains and soybean meal.

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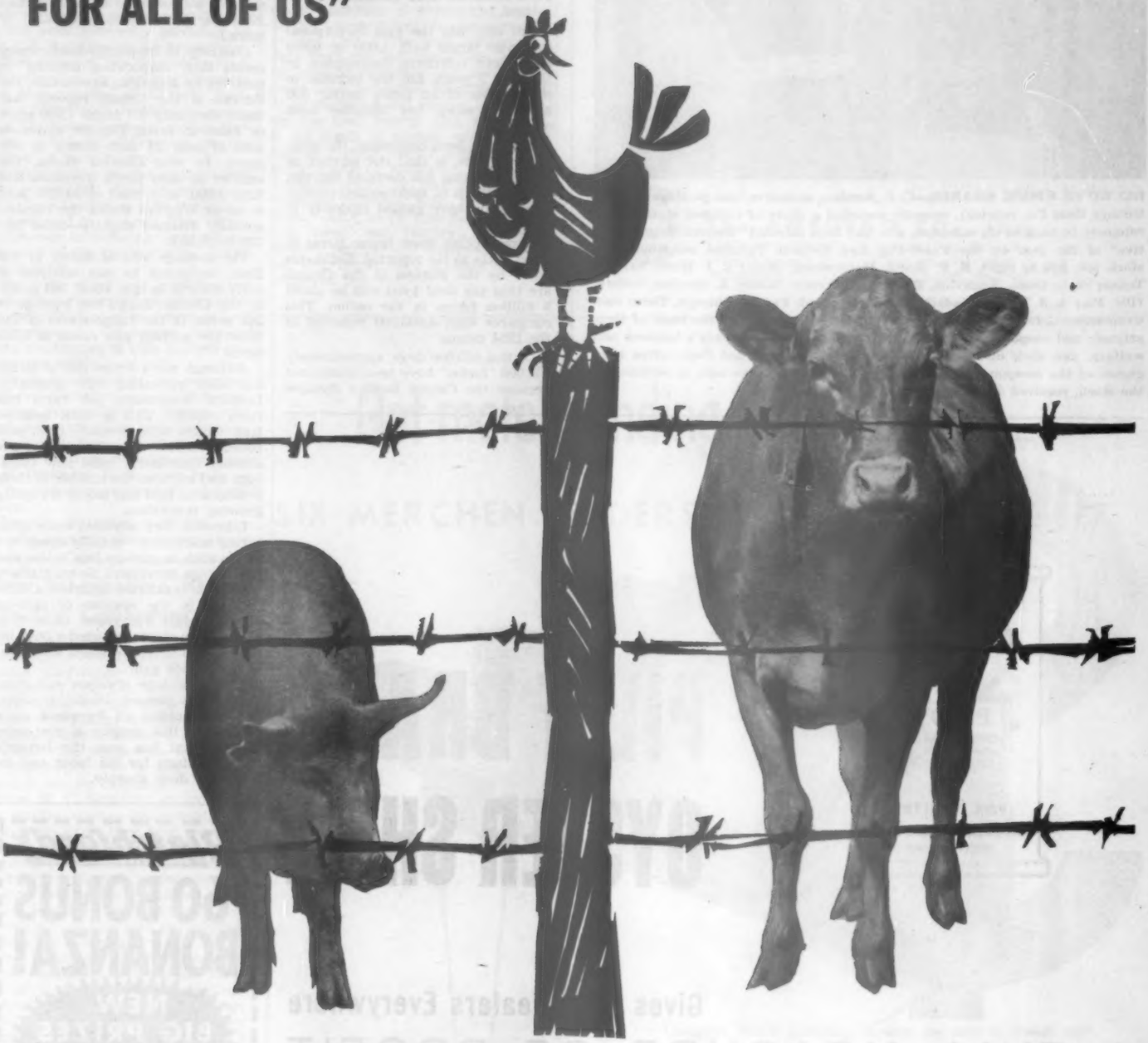
"MORTON'S GOT NEW MIXING SALTS FOR ALL OF US"



afma

Three new mixing salts have been developed by Morton research. All contain a new and improved anti-segregation agent. All trace mineral compounds in these new mixing salts are water insoluble, and each of these three products is backed by Morton quality control.

New Poultry Mixing Salt is the most flexible product of its kind on the market. Containing higher levels of essential trace minerals for poultry, Morton Poultry Mixing Salt can be used in varying amounts for optimum results from your feeds.

New Swine Mixing Salt for growing swine contains a high level zinc content to promote maximum growth and aid in the prevention of parakeratosis.

New Multi-Purpose Mixing Salt contains six specially selected trace minerals used in feed for cattle, sheep and mature hogs.

In addition to these three new Mixing Salts, Morton also offers Iodized Mixing Salt and Special Mixing Salt. All Morton Mixing Salts are backed by extensive research and testing. Morton Mixing Salts are available anywhere in the country. For more information about any of them, ask your Morton representative or write:

Morton Salt Research Laboratory, Woodstock, Illinois

MORTON SALT COMPANY

NUTRITIONAL RESEARCH DEPARTMENT
110 No. Wacker Drive, Chicago 6, Illinois

RECEIVES STOCK SHARES—C. S. Gordon, executive vice president of The Quaker Oats Co. (center), recently awarded a share of common stock in the company to each of six salesmen who had been selected "District Representative" of the year by the Ful-O-Pep feed division. Pictured receiving their stock are, left to right, R. P. Smith, Hattiesburg, Miss.; R. I. Word, Vernon, Texas; W. L. Gross, Knoxville, Tenn.; Mr. Gordon; Sidney A. Speaker, Sellersville, Pa.; A. J. Harlan, Sedalia, Mo.; and Frank Farley, Chicago. These men were selected for this honor by their division managers on the basis of their attitude and cooperation, loyalty, contribution to the company's business and welfare, and their own personal citizenship. The men and their wives were guests of the company for a four-day holiday in Chicago and, in addition to the stock, received a cash gift.

Early Census Analysis Shows Family Farms Play Important Role

PHILADELPHIA, PA.—The family farm is still the backbone of American agriculture, says Farm Journal magazine, after analyzing early reports from the 1959 Census of Agriculture.

Not only has the gain in corporation-type farms with 1,000 or more acres been relatively insignificant in the past 5 years, but the increase in the number of all farms having 500 acres or more has likewise been slight.

What has been happening, the magazine reports, is that the number of marginal farms has declined sharply, while millions of middle-sized family-type farms have gained modestly in size.

Early figures show fewer farms in every state so far reported. Estimates made by the Bureau of the Census are that the final total will be about 4 million farms in the nation. This compares with 4,800,000 reported in the 1954 census.

Of this 800,000 drop, approximately 200,000 "farms" have been eliminated because the Census Bureau changed its own definition of what constitutes a farm.

(In 1954, a farm was a place of three or more acres that produced products worth $150 or more, or a place of even less than three acres if it had sales of $150 or more of farm products. For the current census, a place can be counted as a farm only if it is 10 acres or more and has sales of $50 or more or, if less than 10 acres, if it has sales of $250 or more.)

Contrary to frequently-made statements that "corporation farming" is gobbling up American agriculture, the Bureau of the Census reports that there were only 857 farms 1,000 acres or more in seven Eastern states—a gain of only 24 such farms in five years. In nine Central states, the number of such farms increased less than 3,000, to a total of 31,530. And in seven Western states the number actually declined slightly—from 35,703 to 35,585.

The average size of farms in the East, according to this analysis of early reports, is now about 164 acres. In the Central states the average is 267 acres. In the range states of the West the average size ranch is 1,016 acres.

Although the average size of farms has been increasing only gradually, farmers' investment per farm has risen rapidly. This is both because land values have steadily risen and because farmers have had to buy additional machinery, build new buildings, and increase the number of their livestock to feed and clothe a rapidly growing population.

Likewise, they acquired more labor saving machinery—notably newer devicees such as pick-up hay balers and field forage harvesters. Seven Eastern states, for example, reported a 52% increase in the number of pick-up balers in just five years' time; nine Midwestern states reported a 56% increase, and seven Western states reported a 65% gain.

The percentage of farms with combines, corn pickers, trucks, tractors, and automobiles all increased since 1954—and this despite a cost-price squeeze that has seen the farmer's rate of return for his labor and investment drop sharply.

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PILOT BRAND is uniformly pure calcium carbonate, kiln-dried.

PILOT BRAND costs less per usable pound.

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Oyster Shell Products Company
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Automatic Can Openers!
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Main Plant & Offices: Midwest Division: West Coast Division
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Comparisons Made Among 167 Stocks in Random Sample Tests

WASHINGTON — Valid comparisons among 167 commercial stocks of chickens entered in the 1958-59 random sample egg-laying tests in the U.S. can now be made by poultry raisers, using a combined summary of test results recently published by the U.S. Department of Agriculture.

This summary, the first of its kind, was compiled by poultry scientists and biometricians of USDA's Agricultural Research Service. It evaluates variations between stocks that were caused by differences in the number of tests entered.

Interpretation of the performance data permits the standings to be listed in the summary as if all stocks had been entered in all tests. This allows poultrymen to make an accurate assessment of the relative value of the stocks listed.

For each stock and performance trait, the summary takes into account the repeatability of performance and environmental differences between tests, the number of tests entered and standings within each test.

Traits considered in the summary include: Mortality, age at 50% production, egg production, income over feed and chick costs, feed conversion, egg weight, body weight, albumen quality, blood spots, meat spots, and shell thickness. Each stock is listed in descending rank for each of these traits.

The idea of testing a random sample of a breeder's stock rather than a selected sample was first proposed at the 1927 World's Poultry Congress. It was not until establishment of the Pomona, Cal., Random Sample Test in 1947, however, that interest in this method of performance testing developed in the United States.

As the number of tests and entries increased, the importance of their contribution to the knowledge of production qualities of commercial poultry became apparent. It also became evident that if the vast amount of data from the individual tests could be brought together and analyzed, much could be learned about the roles of environment and chance in deciding the final results. This summary is the result of several years of effort by various poultry organizations to have such an analysis.

Single copies of this publication "Random Sample Egg Production Tests," ARS 44-79, may be obtained free from the Poultry Research Branch, Agricultural Research Service, U.S. Department of Agriculture, Beltsville, Md.

New Hampshire Plans Poultry Conference

DURHAM, N.H.—The 10th annual University of New Hampshire Poultry Health Conference will be held in Durham on Feb. 1-2. The conference is sponsored by the university's department of poultry science.

Officials also announce a new time schedule. The conference will begin on Wednesday, Feb. 1 and will end about 3 p.m. on Thursday.

Prof. W. C. Skoglund, chairman of the poultry science department, said conference topics have been carefully chosen, and will be presented by outstanding authorities in this field.

The New Hampshire men on the Poultry Servicemen's Advisory Committee who met with university representatives to help plan the program include the following:

Fred Garland, Purina Research Farm, Nashua; Arthur Heard, E. C. and W. L. Hopkins, Inc., Greenfield; Richard Goodell, Nichols Inc., Exeter; Richard Strout, extension poultry specialist; Emery Peacock, Unity Feed Co., Manchester; Roland Sherburne, H. K. Webster Co., Lawrence, Mass.; Dr. A. Tepper, Merrimack Farmers Exchange, Concord; Dr. W. C. Skoglund, University of New Hampshire; Thomas Danko, county agent, Concord; Richard Warren, extension poultry specialist; Richard Ford, Wirthmore Feeds, Durham; Dr. J. R. Dunlop, university research pathologist; Thomas Mahoney, R. C. Durgin, Inc., Newmarket; Roger Clement, Beacon Milling Co., Manchester, and Fred Ford, Eastern States Farmers Exchange, Rochester.

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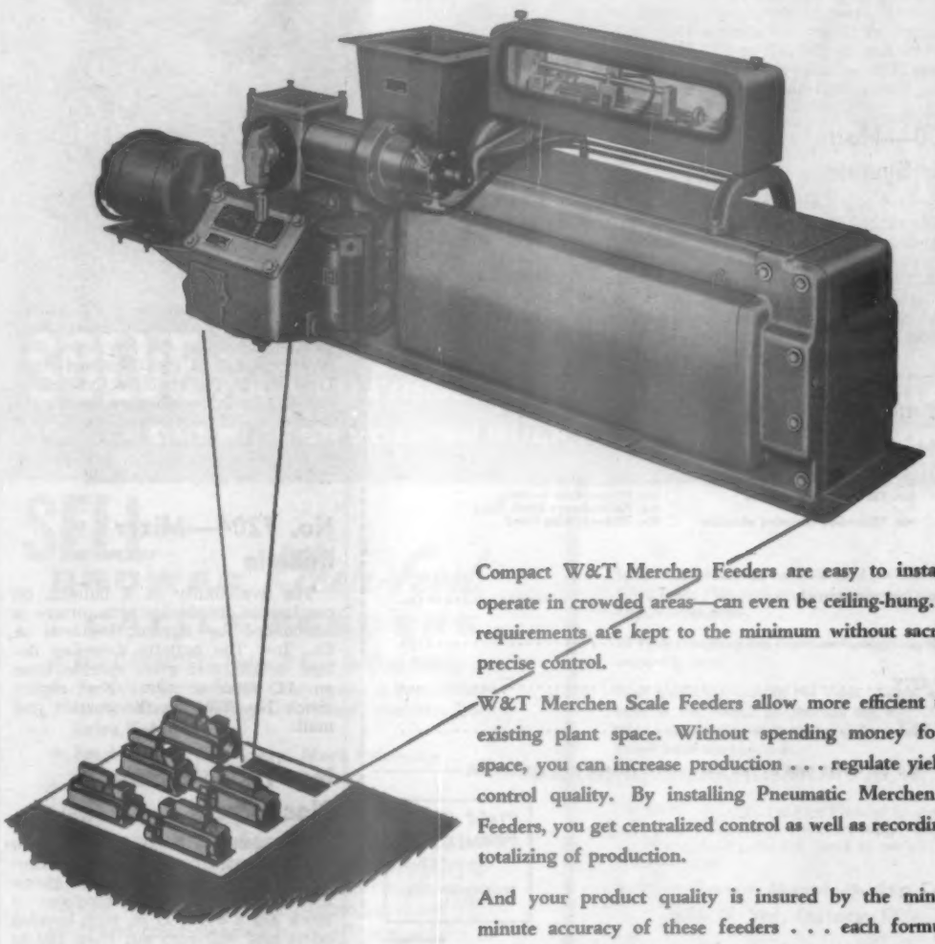

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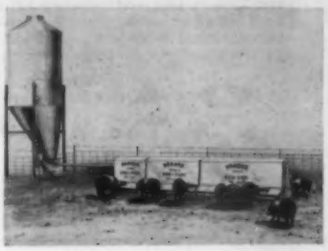
No. 7202—Egg Cleaning Machine

National Ideal Co. has announced the "Premier H & P" egg cleaner, designed to clean up to 15 cases of eggs an hour. Eggs are always visible to the operator, the company says, as the eggs go through the spray bath and warm air drier. Made of stainless, the unit is 9 ft. long and can be adapted to most existing egg graders. The eggs are not immersed in water. Rotation of the eggs

against nylon brushes, while passing through the cleansing spray, cleans the eggs without removing bloom or upsetting air cell, the company says. It is furnished in three model sizes and can be used with 110 volt or 220 volt systems. For details, check No. 7202 on the coupon and mail.

No. 7200—Hog Feeding System

An automatic hog feeding system has been announced by Brower Manufacturing Co. The system consists of bulk tank, auger and individual hog feeders. Feed flows into a hopper from the bulk tank where it is carried by the auger to the individual feeders. When feeders are filled, the



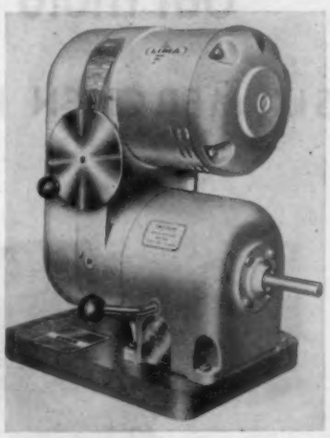
auger stops automatically; when more feed is needed, the auger starts running again. No time switch or manual off-on switch is needed, the company says. The system is available with either rectangular or round feeders. With rectangular feeders, hog capacities ranging from 80 to 480 animals are offered; with round, capacities of from 96 to 504 hogs can be obtained. Four bulk tank sizes are available and have capacities of 4.2, 6.5, 8.8 and 11.1 tons. For details, check No. 7200 on the coupon and mail.

No. 7201—Poultry Vaccine Catalog

A 16-page color catalog on "Apolin" vaccines for the poultry industry has been announced by Associated Laboratories, Inc. The catalog covers in detail the vaccines available to assist in the control of the following diseases: Newcastle, infectious bronchitis, laryngotracheitis, fowl pox and pigeon pox. Another feature of the catalog, the company says, is a vaccination guide which lists proper product for the disease in question, proper time to vaccinate and proper method of application. For copies, check No. 7201 on the coupon and mail.

No. 7203—Drive Unit

The Lima Electric Motor Co. has announced the availability of the "Lima Vari-Gear Drive." According to company literature, every RPM between 180 and 1,800 is obtainable from the unit, when an 1,800 RPM motor is incorporated. Either drip proof or totally enclosed fan-cooled units can be furnished in ¼, ⅓ or 1 h.p. The incorporation of a four



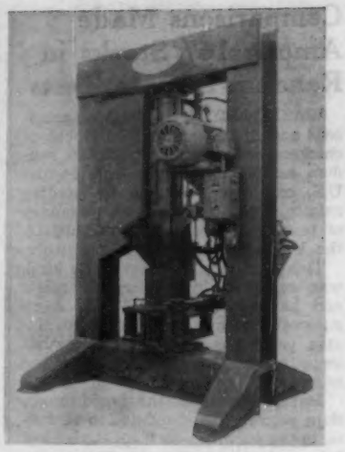
speed transmission as a component of the drive results in three times greater torque at the low speed, the company says. A control wheel regulates the output shaft to the desired RPM. A pointer indicates on a calibrated speed plate, the exact RPM at which the output shaft is turning. For more information, check No. 7203 on the coupon and mail.

No. 7204—Mixer Bulletin

The availability of a bulletin on continuous double agitator mixers is announced by Sprout, Waldron & Co., Inc. The bulletin describes design details and gives specifications on 11 different sizes. For copies, check No. 7204 on the coupon and mail.

No. 7205—Range Block Press

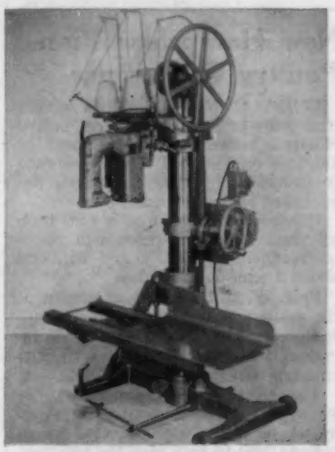
A. E. Johnson & Sons has issued a folder descriptive of its new hydraulic press for manufacturing range feed blocks. The press produces a block 8½ x 8½ x 11 in. with beveled edges and will turn out from 100 to 150 bocks per hour, the manufacturer states. The pressure range adjustments on the hydraulic cylinder ram are 100,000 to 200,000 lb. The material is fed into the die hopper and then the block is formed by one downward stroke of the hydraulic cylinder on which the top die is attached. The finished block then spins out of the blocking dies and is ready for wrapping. The machine is a compact unit, completely assembled for fast installation, the manufacturer states. The press does not need to be anchored



and can be moved easily from one location to another. The machine is of open design, which facilitates quick and easy inspection. Further information may be obtained by checking No. 7205 and mailing coupon.

No. 7206—Sewing Head

Union Special Machine Co. announces the availability of a sewing head designed for higher sewing speed for closing heavy bags. The unit can be operated up to 3,000 RPM, the company says. When run at this speed with a stitch length of 3½ per inch, the conveyor used should be synchronized to move 70



ft. a minute. The sewing head is of the enclosed design featuring automatic lubrication. It is built for closing cotton, burlap and osnaburg textile bags, and multiwall paper bags. The head is suitable for mounting on various Union Special column type and table type bag closing machines, including older units that have other heads. It has a stitch range of three to five an inch, with provision for using filter cord. For information, check No. 7206 on the coupon and mail.

Also Available

The following new products have been described in previous issues of Feedstuffs and information about them may still be obtained by jotting the appropriate number of the coupon and forwarding it to Feedstuffs.

No. 7127—Bulk truck data, Sprout, Waldron & Co., Inc.

No. 7128—Enzyme approval, Merck & Co., Inc.

No. 7129—Adjustable elbow, Huss & Schlieper.

No. 7130—Conveying bulletin, The Day Co.

No. 7131—Equipment bulletin, Fuller Co.

No. 7132—Pallet booklet, Raymond Corp.

No. 7133—Broiler disease program, Chas. Pfizer & Co., Inc.

No. 7134 — Displacement blower bulletin, Sutorbilt Corp.

Send me information on the items marked:

☐ No. 7200—Hog Feeding System
☐ No. 7201—Poultry Vaccine Catalog
☐ No. 7202—Egg Cleaning Machine
☐ No. 7203—Drive Unit
☐ No. 7204—Mixer Bulletin
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No. 7137—1961 "Feedmaker" model, J. B. Sedberry, Inc.
No. 7138—Calf milk replacer, National Vitamin Products Co.
No. 7139 — All-steel bin, Leach Manufacturing Co.
No. 7140—Automatic poultry feeders, Chore-Time Equipment Co.
No. 7141—Hanging poultry feeder, James Manufacturing Co.
No. 7142—Reference manual, Universal Hoist Co.
No. 7143 — Drying, conditioning unit, Habco Manufacturing Co.
No. 7144—Bulk feed stations, Seco, Inc.
No. 7145—Moisture register, Moisture Register Co.
No. 7146 — Feeder bulletin, B-I-F Industries.
No. 7147—Vitamin K report, Heterochemical Corp.
No. 7148—Improved milk replacer, Borden Special Products Co.
No. 7149—Bulk feed body, Henderson Manufacturing Co.
No. 7150 — Collapsible container, Highway Trailer Industries, Inc.
No. 7151—Portable feed bin, Blosser Manufacturing Co.
No. 7152—Protein analysis report, North Dakota Agricultural College.
No. 7153—Explosion protection system, Fenwal, Inc.
No. 7154—Feed ingredient analysis table, Stabilized Vitamins, Inc.
No. 7155 — Cob conveyor, Shelby Manufacturing Co.
No. 7156 — Broiler feeder, James Mfg. Co.
No. 7157—Bin vibrator, Eriez Manufacturing Co.
No. 7158—Poultry bags, Anderson Box Co.
No. 7159—Electronic control brochure, The Electronics Control Division of Flo-Tronics, Inc.
No. 7160—Bulk feed body, Winger Manufacturing Co.
No. 7161—Counter display units, Hess & Clark.
No. 7162—Grain trailer with belt conveyor, The Wilson Trailer Co.
No. 7163—Roll-to-back nest, Keen Manufacturing Corp.
No. 7164—5-ton vertical mixer, Jacobson Machine Works.
No. 7165 — Storage tank heating coils, Dean Products, Inc.
No. 7166 — Water-dispersible vitamins, Merck & Co., Inc.
No. 7167 — Hopper-level control, James Manufacturing Co.
No. 7168—Fork truck attachment, Clark Equipment Co.
No. 7169 — Intermediate range checkweigher, Toledo Scale Corp.
No. 7170—Valve bag packer, St. Regis Paper Co.
No. 7171—Sewing pedestal, Richardson Scale Co.
No. 7172—New coccidiostat, Merck & Co., Inc.
No. 7173—Grain storage equipment, Walsh Manufacturing Co.
No. 7174—Auger molasses mixer, Pacific Molasses Co.
No. 7175—Grain dryer, Figley Cox, Inc.
No. 7176—Auto advertising device, Travelads, Inc.
No. 7177—Gravity powered grain spreader, Habco Manufacturing Co.
No. 7178—Motion safety switch, Fuller Co.
No. 7179—Processing equipment catalog, Edw. Renneburg & Sons Co.
No. 7180—Feed analysis ingredient table, Stabilized Vitamins, Inc.
No. 7181—Pelleting data sheets, Baroid Chemicals, Inc.
No. 7182—Grate magnet brochure, Eriez Manufacturing Co.
No. 7183—Screw conveyor bulletin, Sprout, Waldron & Co., Inc.
No. 7184—Fat, oil applicator, Lingel Fat & Oil Applicator Co.
No. 7185—Gravity feeder, Thayer Scale Corp.
No. 7186—Egg producing program, Hess & Clark.
No. 7187—Rolling mill attachment, Barnard & Leas Manufacturing Co., Inc.
No. 7189—Expansion program, Sweet Manufacturing Co.
No. 7190 — Expanded hammermill line, Seco, Inc.
No. 7191—Grain cleaning machine, Ross Manufacturing & Sales Co.
No. 7192 — Vaccine administering method, Dorn & Mitchell Laboratories, Inc.
No. 7193 — Mold control bulletin, Monsanto Chemical Co.
No. 7194 — Detector catalog, Flo-Tronics, Inc.
No. 7195 — Hopper railroad car, Kurth Malting Co. and Pullman Standard.
No. 7196—Revolver feeder bulletin, Fuller Co.
No. 7197—New package size, Chas. Pfizer & Co., Inc.
No. 7198 — Hopper scale bulletin, Richardson Scale Co.
No. 7199—Molasses in silage described, Pacific Molasses Co.

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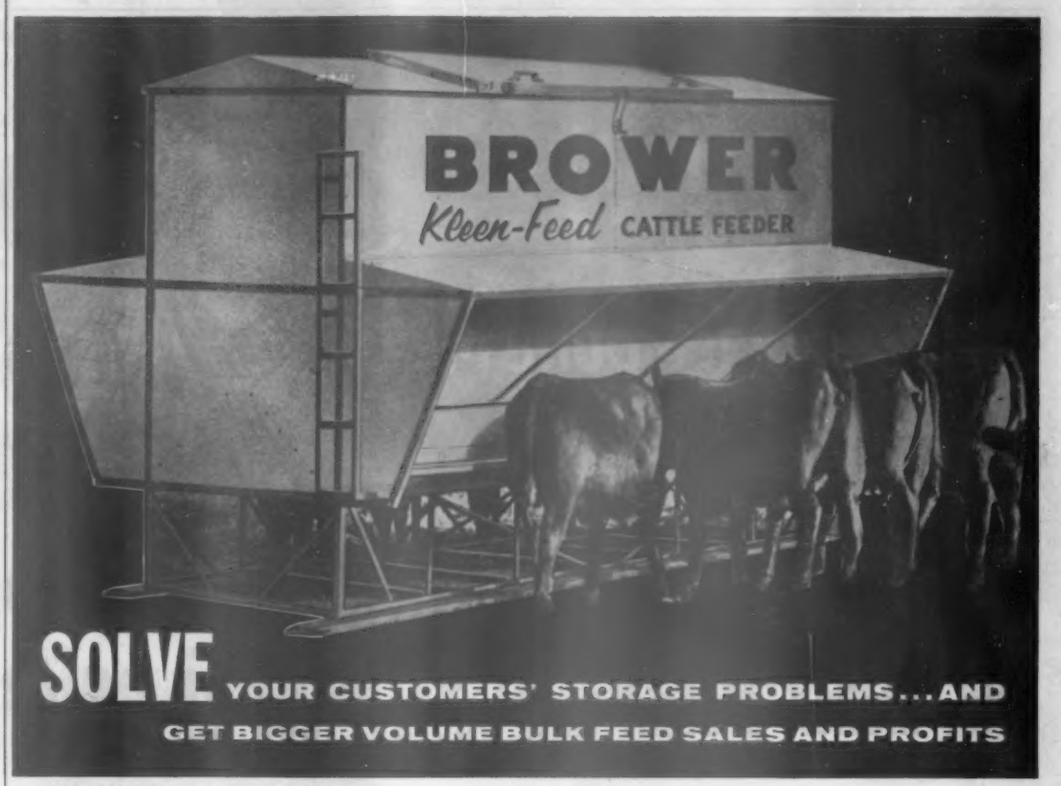
Write today for your free mats and get started.

RYDE & CO. 3939 So. Union St. Chicago 9, Illinois



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30 ft. of trough space. Fourteen to eighteen head can eat at once.

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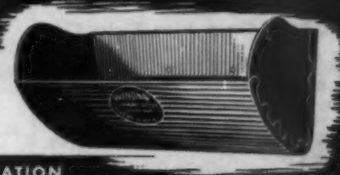

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Test Rice Bran in Rations for Swine

FAYETTEVILLE, ARK. — Results of testing at the University of Arkansas indicate that up to 40% rice bran can be used as a carbohydrate source in growing and finishing swine rations. Conducting the research were Dr. P. R. Noland, Dr. K. W. Scott and Mrs. Alice W. North.

The Arkansas research indicated that inclusion of more than 40% rice bran resulted in lowered gains and feed efficiency and poor quality fat in carcasses.

When good quality rice bran can be purchased at less cost per pound than other carbohydrate ingredients, such a substitution should be considered, the researchers pointed out.

In the testing, as the percent of rice bran was increased, there was a gradual reduction in daily rate of gain and an increase in the feed required to produce a pound of gain. The performance of pigs fed rations containing 41, 61 or 81% rice bran was inferior to that of pigs fed none or 20% of this ingredient. Pigs fed the two highest levels of rice bran exhibited distinct diarrhea throughout the test, the report states.

Carcass backfat thickness was not increased by inclusion of higher levels of rice bran. Carcasses from pigs fed either 61 or 81% rice bran were classed as soft and oily by visual observation. The iodine numbers, a measure of the degree of saturation of the fat, indicated that at a level of 41% rice bran the fat was on the borderline of acceptability.

This testing came after a nearly 20 year period with practically no experimental work in this area, the researchers stated. Earlier tests had shown that use of rice bran as a complete replacement for corn produced slow gains and inferior carcasses. Yet, during the period, marked advances had been made in swine nutrition and the test rations were formulated using this knowledge.

The Arkansas research team indicated that good quality rice bran contains about 12.5% protein, 13.5% fat, 12.0% fiber with 67% total digestible nutrients.

The rice bran was used to replace corn, soybean meal and fat in the basal ration.

Plans Progress for Feed Research Mill

SACRAMENTO, CAL. — The University of California feed research facility, as envisioned by members of the California Cattle Feeders Assn., is about to become a reality.

Bids have been called for construction of the concrete foundations for the feed mill, according to D. E. Alexander of Napa, first vice president of the association. The facility is to be constructed on the University's Davis campus. Fabrication of the mill has partially been completed at a machine works in Napa.

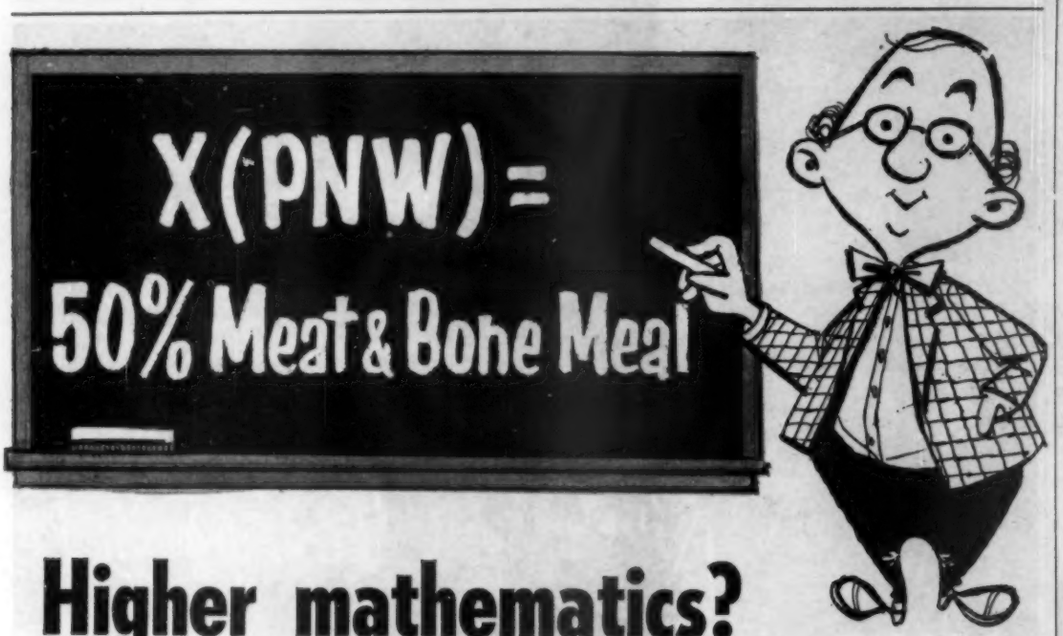
More than $100,000 has been pledged for the project. This will more than meet the cost of the mill, but an equal amount will be required to finance testing facilities, including feeding pens. Members of the California Cattle Feeders Assn., other feeders and allied industries donated initial construction funds.

The mill and feeding pens will be used for both applied and basic research into feeding problems in the West. Value of western feeds and effects of various feed additives will be among the areas for research. The facilities also will be used to train graduate students in animal nutrition and agricultural engineering.

Keenco Appointment

VINELAND, N.J. — Harold H. Grice has been appointed southeastern sales representative for the Keen Manufacturing Corp., producer of automatic poultry equipment. He will direct Keenco sales activities in a five state area including North and South Carolina, Georgia, Alabama and Florida.

Prior to joining Keenco, Mr. Grice was a district sales manager with the Rion (S.C.) Crush Stone Corp. He resides in Winnsboro, S.C.



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Protein	Riboflavin
Fat	Pantothenic Acid
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Phosphorus	Vitamin B_{12}

Plus Unidentified Growth Factors
at less cost than competitive products

Partial Nutritional Worth sounds complicated but all it really means is a measurement of the actual worth of the protein, energy, vitamins and minerals in relation to the market price of the ingredient. Your feed dollar buys more of the important feed values when you invest it in Meat and Bone Meal.

50% Meat and Bone Meal gives a better balance of vital growth ingredients for better conversion and more weight gain at lower cost per pound. Truly outstanding results can be expected from the Unidentified Growth Factors found only in Meat and Bone Meal.

Start getting your extra dividend regularly by:

(1) Including full quotas of Meat and Bone Meal and stabilized animal fats in feed rations.

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Let this feed ingredient build more sales and better profits for you. Write today for our free booklets on Meat and Bone Meal. They'll help you improve feeds and profits in mills of every size.

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CEDAR RAPIDS, IOWA

A new, easy one-drop method for lasting immunity to coccidiosis

Now you can buy your day-old chicks with built-in, planned, lasting protection against coccidiosis.

The hatchery from which you buy your chicks can give each chick just the right amount of CocciVac to provide measured, controlled exposure to coccidiosis.

Presto. With controlled exposure, the chick develops immunity early, when it is most important. Simply follow with Trithiadol* in the feed, as directed, and the protection program is completed.

Chicks with early immunity to coccidiosis grow better—are stronger, healthier—better able to withstand the stresses of other diseases. No coccidiostat is needed after 5 weeks, eliminating the coccidiostat withdrawal problem.

Be the first in your area to use this valuable service. Ask your hatcheryman *today*. It's easy and inexpensive.

You actually save money when total cost is compared to an all coccidiostat program.

Send today for descriptive folder and sample applicator, or see your local Sterwin Animal Health representative.

CocciVac *Type 4 is available for broilers. Type A and B for layers and roasters—and for broilers in heavy exposure areas.*

*While some growers use other coccidiostats with CocciVac, Trithiadol® is recommended because of its proved efficiency with the CocciVac program.

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JOE BROOKS

BY AL P. NELSON

The New Employee Learns

Four of Joe Brooks' seven employees were eating lunch in the employees room. Three men were stationed in the farm supply store and office, the mixing room, etc., to handle the noon-time trade. These three would eat their lunch later.

As usual at the lunch period the employees talked about football, deer hunting, local town doings, women and the high cost of living. Business, too, occasionally got into the stream of talk.

"One thing I've noticed since I've been here," said Mike Bradley, a new employee, "is that Joe will actually grind and mix for a farmer who brings in his own favorite concentrate. And Joe seems to welcome this type of business. Old Man Matson over at Rio where I worked before would just about blow his top if a farmer would come in and bring his own concentrate."

Smiley Johnson smiled. "Yeah, offhand it does seem like taking a slap in the face, doesn't' it? But our Joe is smart. He knows that if you get a farmer coming to the mill regularly, **that is what counts.** You know we sell other stuff besides concentrates."

Pop Henley finished chewing on his cheese sandwich. "And I'm telling you practically every farmer we take in on that basis, lettin' him bring his own concentrate, eventually gets around to usin' our brand. It may take three or four months, but he usually gives in."

"I've noticed that," Smiley said. "Such a farmer can't help hearin' other fellows say, as they wait for service, that they sure like our mix, with our concentrate. After a while, he begins to tell himself he's wastin' time buyin' his favorite concentrate elsewhere, haulin' it home or here when he wants grindin' and mixin'. Sooner or later he's gonna order some feed with our concentrates, try it and like it—and he's in."

Pop Henley nodded. "Sure, and if Joe told such a guy in the beginning that he has his nerve bringing his own concentrate here, we'd lose a potential customer, and maybe make an enemy, too."

Have to Win Business

"That's right," put in Milt Peters. "You have to win a farmer's business and good will some way, even if you can sell him only one little service at a time. I thought Joe's policy on customers' favorite concentrate was off center when he first started it, but, man, I've seen it work."

"That man Jensen over in Beecher," Pop put in. "That's the way he started with us, bringing his own concentrate. Later he switched to ours and is one of our best boosters. And, man, the way that fellow fertilizes his 240 acres. And buys it all from us."

Mike Bradley shook his head. "Yep, times are changing in the feed business. And the other day I saw Joe sell lots of concentrate to a big feeder that has his own grinder-mixer on the farm. Can you feature that?"

"Why not?" countered Milt. "It's the same thing. We make a profit on the concentrate, even on a volume discount. And Joe sells lots of those big feeders bunk feeders, hog feeders and things like that. And the fertilizer business we get that way, too."

Mike Bradley nodded. "Sure, it's all money, and adds up."

Pop chuckled. "I remember when Joe came back from a convention and said that some dealers tried to pin his ears back when he told them he sold molasses to two competitive mobile unit millers in his area."

"I remember that, too," Smiley grinned. "We got a mobile, too, but, man, we are pumping a lot of molasses outa that storage tank and sellin' it to our competitors."

"Why not?" asked Milt. "If we don't sell 'em molasses, they'll get it elsewhere. We might as well sell it and make extra profit. With all of us on a sales incentive plan and profit sharing, I'm all for selling anything extra at a profit."

"Me, too," said Pop. "Too dang many feed men work like crazy tryin' to run the other fellow out of business. You can't do that. Better to sell all you can and build your own volume and profit. Let the other guy worry about his business. You take care of yours."

Milt Peters assumed the expression of a practical businessman discussing profit. "Look at it this way, fellas," he said slowly. "We got seven men in this plant, plus four at Endeavor. We all wanna get paid every Saturday,

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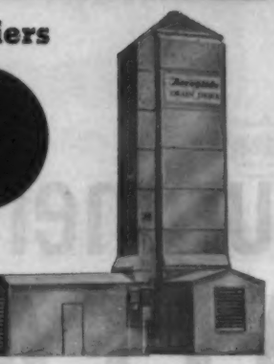

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and Joe does, too. That means lots of dollars gotta roll in here every week to be ready for pay day."

"Plus dollars for power, insurance, repairs and lots of other items," threw in Pop.

"Right," conceded Milt. "So it's the duty of every one of us to keep as many dollars rolling in every day as we can."

"Dollars that bring a profit," Pop suggested.

"Right again," Milt said. "So, why should we care who we sell to, farmers or competitors, so long as there is something in it for us?"

Mike Bradley smiled. "Gee," he said, 'I'm learnin' more in this mill than I did when I went to school. You fellows really got things figured out, haven't you?"

Milt nodded wisely. "Sure we have. We've gotta have things figured out for our own good. Joe has been pushing these monthly sales training meetings for years. He emphasizes these and lots of other facts. We know just about as much of the feed business as he does. Sometimes I think we know a little more."

This brought loud laughs from everyone.

"Anyway," Milt went on, "Joe has made us realize that our jobs and our pay depend on how well the mill goes, and that it's our job to make extra sales and make customers satisfied. It ain't Joe's responsibility alone."

"I can see that," Mike Bradley replied. "The other feed man I worked for never told me nothin' about his business or his problems. If I asked once in a while he'd glare at me like it was none of my business. I like this deal better. Man, I'm lookin' forward to that sales trainin' meetin' next Friday night. I wanna learn, 'cause it'll mean more money in my pocket on this incentive plan."

Added Floor Space Boosts Egg Production

By Special Correspondent

BATESVILLE, ARK. — Could a poultryman realize more net profit from his layers if he gave them more floor space?

Earl and Dan Cousins of nearby Floral think so, and they have the records to back up their claims.

The brothers started 12,500 Leghorn pullets in the spring of 1959, and when the birds were ready to be put in laying houses, they were divided into several groups.

The Cousins wanted enough pullets to fill their houses to capacity at the rate of 2 sq. ft. per bird.

But when all of their producers were supplied with pullets, they had 3,500 birds left on their hands. They decided to keep them in a 10,000 sq. ft. house.

Earl says that when he decided to let the pullets remain in the house he believed the flock would be unprofitable. But he was wrong.

These hens are still in production, and accurate records show the flock averaged 5% more eggs during the fall of 1959 and up until last August. Since September, they have been outproducing the other flocks by some 10%.

Earl says the birds look better than the ones with only 2 sq. ft. of space. And he believes they will stay in production longer, too.

From now on, the Cousins may use about 3.5 ft. per bird with their layers.

Feed Sales Tonnages For Louisiana Told

BATON ROUGE — Formula feed sales in Louisiana during the last year totaled 422,780.92 tons, according to figures announced by the Louisiana Department of Agriculture and Immigration. Total commercial feed sales for the state came to 669,290.87 tons for the year ended Aug. 31.

Formula feed sales by classification were: horse and mule, 50,556.30 tons; ox, 6,158.94; dairy, 126,242.14; calf, 8,859.11; pig and hog, 30,242.02; poultry scratch, 8,442.19; poultry mashes and rations, 190,393.13, and rabbit feeds and rations, 1,877.09.

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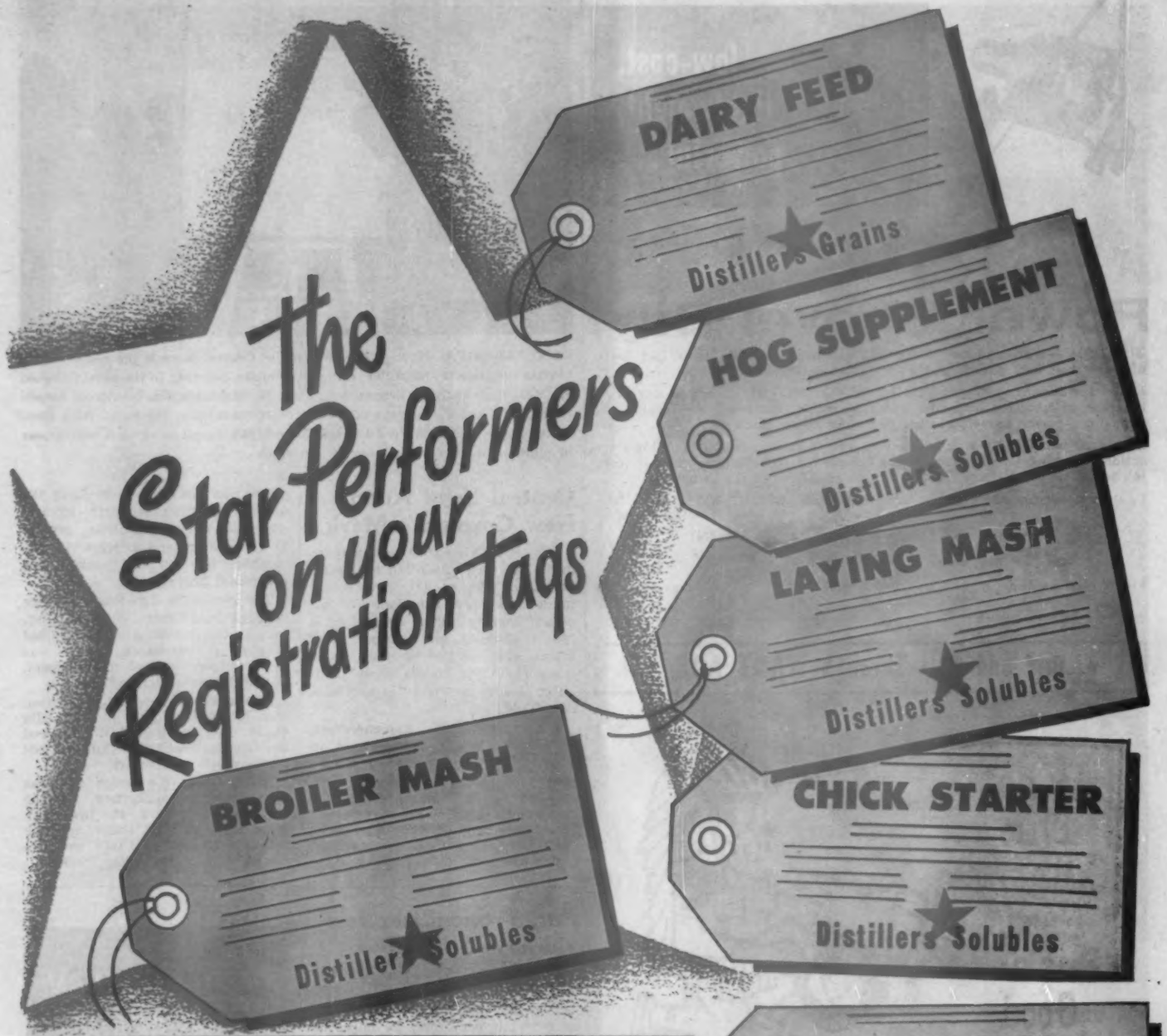

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Protein	24-30%	Protein	21-28%
Fats	5%	Fats	9-11%
Mineral	6%	T.D.N.	80-85%
T.D.N.	85%	Fibre	12-14%
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CENTRAL SOYA—New corporate mark of Central Soya is the center of attention for Dale W. McMillen, company founder, pointing to the mark; Harold W. McMillen, board chairman, left; Dale W. McMillen, Jr., president, second from right, and E. E. Reynolds, director of marketing, far right. Also illustrated is the McMillen Feed Division Master Mix brand mark as it will appear in relation to the corporate name and mark.

Central Soya Adopts New Corporate Mark

FT. WAYNE, IND. — Announcement has been made that Central Soya has adopted a new corporate mark. This mark is the hub of a corporate identity system created by a New York design and marketing consultant firm for Central Soya, which is reportedly the world's largest processor of soybeans with annual sales of $276,073,360.

According to the announcement, one of the considerations kept in mind in the planning of the new corporate mark was the fact that Central Soya's four major divisions—chemurgy, McMillen Feed, grain and processing—are all concerned with the ultimate production of more and better foods.

The new mark has three plant-like arrows thrusting vertically from a globe-like circle symbolizing growth in size, stature and in service to agriculture, industry and mankind, the consultant firm says.

The corporate signature has been changed from Central Soya Co., Inc., to just Central Soya—recommended because the shortened name was more unique and had more impact. It will appear alongside the mark.

One aspect of the design program was modernizing the Master Mix shield used by the McMillen Feed Division to identify its line of feeds for livestock and poultry.

In this case, the design aim was to preserve the equity built into the existing brand mark, the firm said. Thus the five-sided shape and the colors, red, white and blue were retained in the Master Mix mark.

Fat, Tranquilizer for Turkeys Studied

BROOKINGS, S.D.—Research conducted at South Dakota State University indicates that growth, as well as feed efficiency, may be improved some with the addition of fat to the diets of growing turkeys.

"More work is needed to confirm these observations, however," say the scientists, "and fat additions in turkey diets can not be recommended on the basis of work completed to date."

The scientists added reserpine to each of the diets. Work performed by Dr. R. K. Ringer, Michigan State University, shows that reserpine will dramatically reduce the blood pressure of Broad Breasted Bronze turkeys. (In three field trials conducted at South Dakota, involving some 13,000 turkeys, diets containing reserpine stopped the death losses that had been occurring as a result of aortic rupture.)

In the growth tests, protein level was increased along with the fat additions, so the effect of the protein may be involved with the improved gains, even though previous work has indicated that the protein levels being used were quite adequate in the control corn diet series.

For maximum growth, report the South Dakota researchers, it appears that reserpine at the level of 0.5 mg. per pound should not be used continuously from 12 to 26 weeks of age. When it is used to prevent losses from aortic rupture, reserpine at this level will not greatly interfere with growth for at least a 4-week period, according to this experiment.

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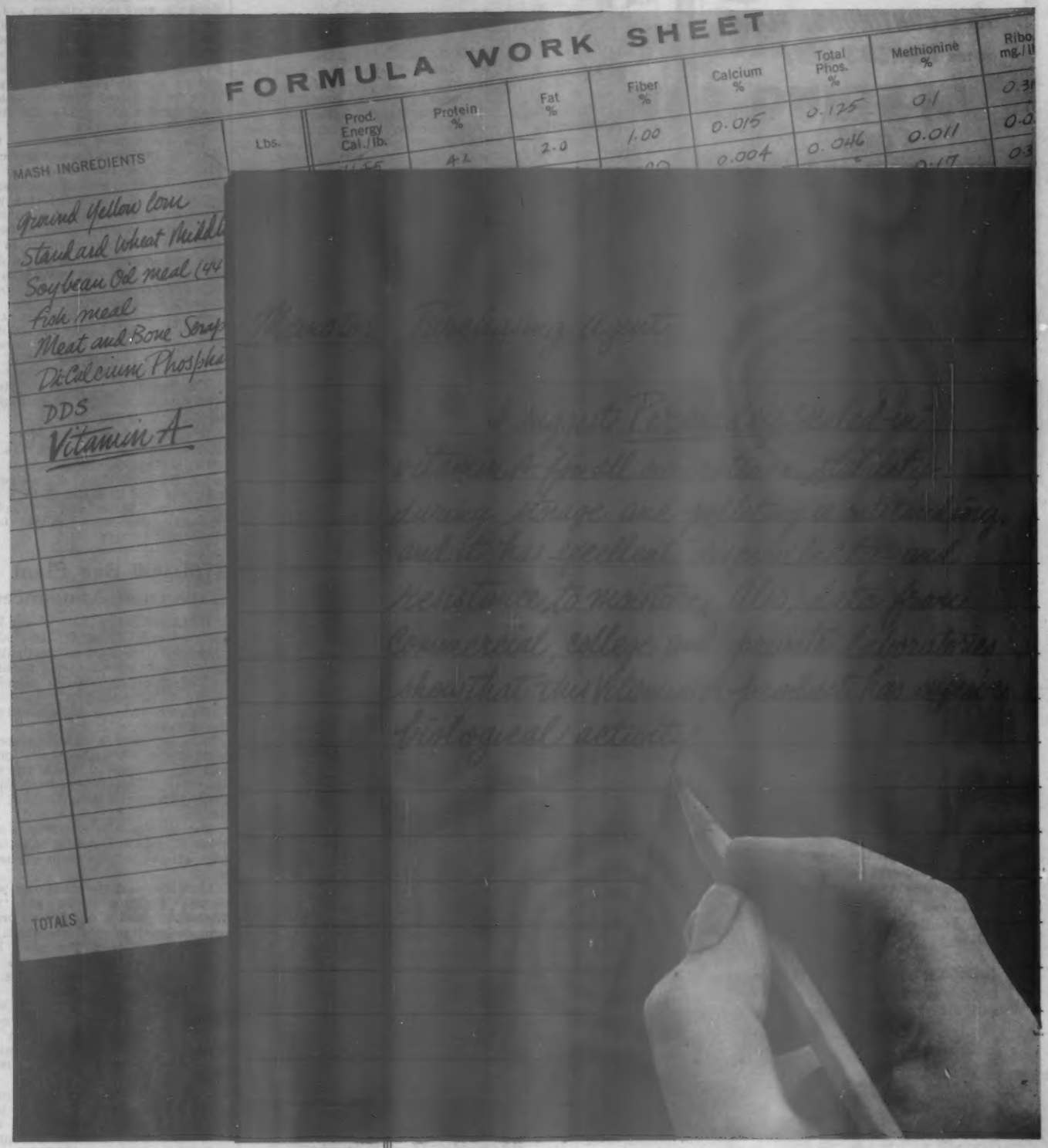

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Study Grain Values For Steer Fattening

FAYETTEVILLE, ARK. — Steers fed corn made the fastest gains in a recent test of the values of four Arkansas grains in steer fattening rations. Dr. Maurice L. Ray made the tests with corn, milo and wheat each fed separately and in combination with oats.

Addition of oats to the corn did not materially change the average daily gain, feed intake, feed efficiency or cost of gains, Dr. Ray reported. He said that the average daily feed intake for the corn-fed calves was higher than for the other lots and overall feed efficiency was best for anmials in the lots where corn was fed.

Wheat proved superior to milo in the daily gain and feed per pound of gain categories. The addition of oats to wheat improved feed intake but resulted in lower average daily gain and more feed required per pound of gain. The rations of wheat with oats were most costly in terms of cost per cwt. of gain, followed closely by wheat alone.

Milo rations were lowest in average daily gain. The addition of oats to the milo ration materially improved average daily gains. Oat and milo rations also were more efficient and less costly per cwt. of gain than the rations with milo as the only grain.

The tests used 12 lots of steers with an average initial weight of 492 lb. and an average grade of good plus. Each lot contained 10 steers with an equal number of Herefords and Aberdeen-Angus in each lot.

The steers were started on feed Sept. 28, 1959, and the test was completed June 6, 1960. Silage and lespedeza hay were used as roughages.

The lots of calves fed oats with other grain were started on a ratio of 3:1 oats to other grain. After 28 days the ratio was changed to 1:1 oats and other grain. After 56 days on feed the ratio was changed to 1:3 oats to other grain for the remainder of the 252 day period.

Protein concentrate was fed at 1.0 lb. per head daily for the first 56 days and increased by ½ lb. each succeeding 56 days until at the end of the finishing period, when protein needs are high relative to grain, the steers were receiving 3.0 lb. of cottonseed meal per head daily.

Grain and supplement were fed each morning and roughage was fed after the steers had consumed the grain. The level of hay and silage intake was held at 6 and 15 lb. a day respectively. Water and a complete mineral mixture were available free-choice at all times.

$700,000 Bag Plant Expansion Announced

WELLSBURG, W.VA. — West Virginia Pulp & Paper Co. is moving ahead with its overhaul and buildup of multiwall manufacturing facilities by investing $700,000 in improvements at Wellsburg, W.Va., according to Victor S. Luke, manager, multiwall bag division.

Installation of a new high-speed, stepped-end tuber, bottomer, press and bag machine at Wellsburg will increase production of pasted valve multiwalls from 3-6 million bags per month.

The plant is also installing a machine to make self-opening baler type bags, used to package small consumer units.

Mr. Luke said the additional production facilities would give the Wellsburg plant a full line of products designed to meet the needs of any multiwall user. The plant has facilities for making all types of sewn, pasted and open mouth bags.

The expansion at Wellsburg involves the construction of a new warehouse of concrete tilt slab construction and the winterization of present storage facilities. The entire project will be completed early next year.

Similar modernization and expansion programs have been completed, or are nearing completion, at the New Orleans, St. Louis and Torrance, Cal., bag plants operated by the company.

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Expanded Organization Planned At First Liquid Feed Convention

By MARTIN E. NEWELL
Feedstuffs Staff

KANSAS CITY—The first convention of the new Liquid Feed Assn. took place in Kansas City Nov. 16-18. The group voted to aim at a vigorous development of the organization to embrace all mixers and dealers in this kind of feed, plus representatives of allied businesses. About 50 persons attended the sessions, which dealt with credit, sales and other business problems.

The meeting was initiated by a group of 10 distributors and mixers and two allied suppliers, and was the outgrowth of the formation of an organization by this group about a year ago. All of the initial members came from Iowa, Illinois and Missouri, but the association now plans to expand nationally. Present membership totals about 20, but the organizing group calculates that there are about 1,000 persons, nationally, who would be interested in this field, either as mixers, dealers or suppliers of equipment and ingredients.

From this group, it is felt that it would be easy to reach a membership of 100 in a short time. At present there are some 85 operators who could be classed as mixers and wholesale distributors of liquid feeds, but the association has now adopted a retail dealer membership category which would expand these numbers considerably. A high percentage of the members are distributors of the Morea brand of liquid feed, but the association is not limited to this group and is open to any liquid feed operator.

Most members of the association also are engaged in fertilizer business, either as anhydrous ammonia distributors, or in the liquid fertilizer or bulk blending fertilizer business. Less than one fourth are solely liquid feed distributors.

Since they often deal with the same customers for both fertilizer and feed, and since many of the handling problems and some of the equipment are similar, the two services fit well together and give the operator more of a year around business than either operated alone. Because most of the liquid feed goes to dairy and beef cattle, about two thirds of the annual feed business comes in the winter, when fertilizer business is dormant.

Officers

Officers in charge of the first convention were Paul Duesterhaus, Duesterhaus Farm Supply Co., Quincy, Ill., president; Jay Friedman, Liquid Feed, Inc., Wood River, Ill., vice president; E. W. Thomas, Farm Service Corp., Boonville, Mo., secretary-treasurer. Each presided over one of the sessions, as did Jack von Mettenheim, Illinois-Wisconsin Feed Co., Princeton, Ill., another leader in the formation of the group.

A successful dealer in liquid feeds, Paul Orr, of Meiner's Soil Service, Inc., Colfax, Ill., told how his firm started in liquid feed with a well publicized dinner for the cattle feeders among the 600 customers of its fertilizer service. With this spectacular kick-off, the business has grown steadily under systematic sales and service efforts.

Mr. Orr said that it requires an $8,500 capital investment to get started as a liquid feed retailer, with the minimum essentials of a 6,000-gal. tank, a delivery truck and an inventory of feed materials and feeders.

Based on Mr. Orr's experience, sales of at least 200 tons are necessary to reach a break-even point. Beyond that, the enterprise will be in the black, he said. In this calculation, 25% of returns were set aside for depreciation and 5% for interest on investment. Sales costs, he said, averaged about $5 ton, delivery costs $2, advertising $2 and quantity discounts $1. Discounts were set up for purchasers of 50 tons or more.

Encourages Record-Keeping

Taking a leaf from his fertilizer sales book, Mr. Orr tries to help his feed customers keep records, so they will know what progress they are making. Fortunately, he said, some customers keep very accurate records and he has been able to use these for publicity and advertising to show the general public how effective his feeding program can be.

When a new customer is secured, Mr. Orr makes every effort to make that customer understand that he (Mr. Orr) is interested in the customer's progress and concerned about making money for the customer.

As a general pattern, Mr. Orr sets up a series of calls on new customers. During the initial call, he explains the program, supervises the proper installation of feeder equipment the customer must purchase, making sure that it is located near a good supply of clean water and impressing the customer with the fact that he should call for Mr. Orr's help if the feeder has to be moved.

In three days, Mr. Orr calls back on the customer to see that all is going well. On the 10th day another call is made and thereafter the customer is visited every 30 days. Mr. Orr is ready to talk about anything that concerns the customer's problems at any time and enlists outside help, including the local veterinarian, for difficult problems.

The value of such service cannot be overestimated, he emphasized. It is essential for building sales. He keeps a card for every customer on which pertinent information about aims and progress are kept up to date and the cards are consulted before calls are made.

Nitrate Poisoning

The group was also told that an increasing problem in recent years, particularly in the central states including Missouri, has been nitrate poisoning of cattle. This occurs under a variety of conditions and appears to be accentuated by drouth. What makes it specially important to the liquid feed group is that, if urea has been part of the ration, the urea usually is blamed for the outbreak, even though it may not be the prime cause.

Dr. W. H. Pfander, of the University of Missouri, discussed this problem and its many ramifications, as seen in the cases which come to the attention of the college, which he said probably were only one in fifty that exist either in acute or chronic form.

Dr. Pfander said that a variety of factors might be involved in any given case of nitrate poisoning. Forage having a high content of potassium nitrate seems to be the main cause in most cases, and he pointed out that some crops and some weeds are potentially higher in this chemical than others.

The stage of maturity of the crop, the amount of light and temperature also have been shown in Missouri experiments to have an influence on the accumulation of these substances in feeding materials. Another source of potential trouble is the water supply, which also can carry high levels. Dr. Pfander said that crops of grain raised on highly fertilized soil in the year after a drouth are particularly susceptible to these accumulations of nitrate.

The best way to combat the problem is to feed as well-balanced a ration as possible and one with a high starch content. Corn starch is the best offset against this condition, he said, and pointed out that feeding of urea in the U.S. has been at higher levels than generally possible in Europe because mainly corn is fed here and other grains abroad. In a high percentage of the Missouri cases, the cattle have been on urea rations, but urea itself is not the cause of the condition, Dr. Pfander pointed out.

Vitamin A Deficiency

Nitrate poisoning almost always shows the classical symptoms associated with vitamin A deficiency, Dr. Pfander said, but it occurs often where rations are adequate in vitamin A according to normal standards. Autopsies often show higher than normal concentrations of vitamin A

STEERING COMMITTEE MEMBERS—Members of the steering committee of the Carrollton, Mo., Agricultural Development Council, which recently initiated a new-type poultry and livestock production plan are: Front row, left to right, John Franken, attorney; Mel Miller, Mel Miller & Co., Kansas City, and Harold Mulch, supermarket grocery owner. Back row, left to right, James Blevins, chairman of the Agricultural Development Council; James Heitmeyer, county agricultural extension agent; Paul Barry, electrical supply dealer, and Homer E. Dunham, First National Bank of Carrollton. (The program was described in Feedstuffs Nov. 19.)

TWELVE MONTH SUMMER—The new movie made for the American Dehydrators Assn. was shown for the first time in Kansas City recently. "Twelve Month Summer" presents on film the story of how the nutrition of alfalfa as it grows in the summer is captured and held throughout the year in dehydrated alfalfa. It also presents nutritional information from leading feeders and agriculture experiment stations on how dehy can increase feeding efficiency. Designed for showing to feed manufacturers or livestock feeders, the film is already being put to use by members of the association, ADA officials said. Shown getting delivery of the first copy of the movie is J. M. Schrum, left, Sugarland Industries, Inc., Sugar Land, Texas, president of the ADA. Joseph Chrisman, executive vice president, is making the delivery to Mr. Schrum who placed the order on behalf of the Texas Dehydrators Assn.

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in the blood stream and not in the liver. This leads to the conclusion that this is either a disease condition or something is interfering with the utilization of the A in the ration, he said.

The emergency veterinary treatment is injections of methyl blue in the bood stream, which acts as an antioxidant. One veterinarian commented, however, that the symptoms of nitrate poisoning are often dead cattle, and animals often cannot be brought back to proper growth, even if their lives are saved, because liver damage has occurred.

Dr. Pfander expressed the opinion that there are many undiscovered mild or chronic cases where the only evidence of anything wrong is an unexplained poor growth or breeding deficiencies in the animal. He also commented that efforts at Missouri to create nitrate poisoning experimentally had failed, and these and other things led him to guess that a prior condition for nitrate poisoning was a deficiency of some one or more minerals.

Importance of Minerals

Don R. Fischer, of the agricultural chemicals division, Monsanto Chemical Co., St. Louis, discussed the importance of minerals in livestock rations, and stressed that each has an important role to play in nutrition, even those which are present in such small amounts as to be characterized by the layman as "trace" minerals, a term he deplored.

The mineral problem of the liquid feed manufacturer is made more difficult than that of the dry mix by reason of the fact that minerals react with each other more readily in solution, and this must be taken into account in formulating the ration, he emphasized. Chelating agents can be used in these circumstances, he pointed out, and added that all of these problems can be solved by the application of sound chemistry.

Mr. Fischer said that there is a growing interest both in liquid fertilizer manufacture and also in liquid feed manufacture and he said it would not be long until continuous mix liquid feed plants would be in operation similar to the liquid fertilizer mixing equipment already in use.

Dr. E. W. DeWerse, a veterinarian of Marcelline, Mo., discussed the physiological barriers to disease that are the natural protection of the animal and said that these barriers must be sustained by a good level of nutrition. Free choice feeding, he advocated, was most likely to achieve this result.

Credit Problems

Credit problems were discussed by Douglas Graves, of the Harris Trust & Saving Bank, Chicago, who pointed out that credit should be extended on the basis of the borrower having a productive and profitable operation which will automatically provide the funds for repayment when due. Credit should not be extended on the basis of a financial statement, since a statement is not a productive operation, and often is not even a true summary of the client's financial condition.

Credit must be budgeted, he said, and he complained that too many feed companies are using credit as a tool for building their own sales without regard for the needs or capacities of the borrower. Naturally, this gets many borrowers in trouble. Mr. Graves said he had no fear of integration and finance swamping agriculture. It would not be economically possible for commercial companies to finance a major part of agriculture, he declared.

Mr. Graves urged feed men to become well acquainted with all bankers in the territories they serve, so that the banker will understand and have confidence in their type of operation, and this will greatly facilitate credit extension to their customers.

Other speakers on the program were Dr. William L. Albrecht, professor emeritus, University of Missouri, and well known agronomist, who spoke on soil nutrition and its relation to animal nutrition, and John Thornbery, First National Bank of Kansas City, who welcomed the group and gave an inspirational talk.

Regional Poultry Conventions Slated

CHICAGO — The Midwestern Regional Quickie Convention, sponsored by the American Poultry & Hatchery Federation, will be held Dec. 7-8 at the Conrad Hilton Hotel in Chicago. Registration is slated for 8:30 Wednesday morning.

Scheduled for Dec. 8-9 in Philadelphia is the Eastern Regional Quickie Convention sponsored by APHF and the Northeastern Poultry Producers Council. Registration starts at 8:30 a.m. Thursday.

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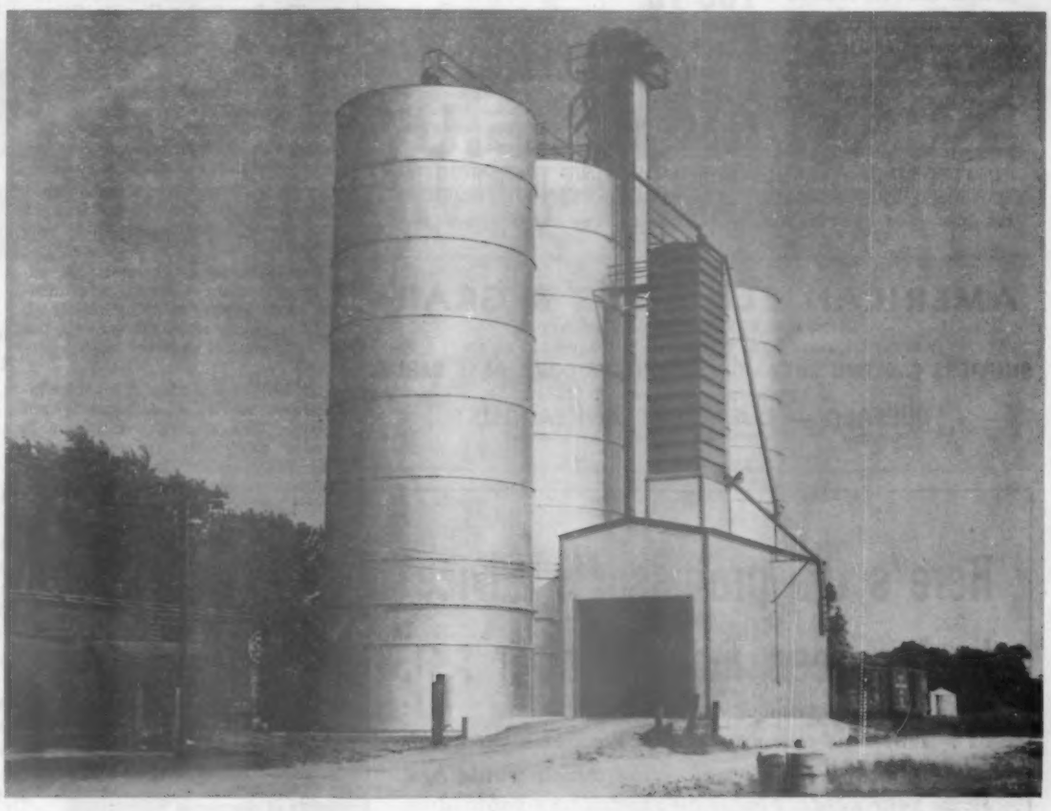

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Importance of Higher Calcium Levels In Laying Feeds Cited at Fresno

By ROGER BERGLUND
Feedstuffs Managing Editor

FRESNO, CAL.—The necessity of higher calcium levels for modern laying birds to obtain better shell quality was pointed out in discussions at the California Animal Industry Conference in Fresno.

The subject came up during a panel discussion of poultry nutrition moderated by Hobart R. Halloran of Halloran Research Farm, Modesto, Cal. It was one of many questions considered during the poultry session, which was one of the features of the two-day conference sponsored by the University of California and the California Hay, Grain & Feed Dealers Assn.

Members of the panel included G. R. J. Law, Dr. F. H. Kratzer, Dr. F. W. Hill and W. F. Rooney of the University of California; Dr. H. S. Wilgus, The Ray Ewing Co.; Dr. George Kohler, U.S. Department of Agriculture, and Dr. George Davis, University of Florida.

The discussion of calcium levels in laying feeds was prompted by the question of whether other nutrient requirements would be altered if the ration contains 3 or 3½% calcium.

In going from 2% to a higher level of calcium, there would be a slight lowering of other nutrients, it was stated.

Mr. Halloran commented that additional calcium is needed with modern birds. It may be theoretically all right to reduce nutrients, he said, but it isn't practical to go below 15% protein.

Dr. Wilgus said present evidence indicates that 2¼% calcium is not enough, that 3%, plus or minus, is needed today. Mr. Rooney cited a University of Maryland formula for determining calcium requirement which indicates that, with birds producing a dozen eggs on 4 lb. of feed, the level would be 3%.

Birds are now being bred for higher production and output of larger eggs, Mr. Halloran said, and one can figure how much calcium these birds need.

Dr. Wilgus suggested building feeds on the basis that birds are laying at 100%; then 3% calcium is a modest figure.

With a 4-lb. bird, said Dr. Hill, 3% calcium should cover the situation.

Other questions and answers and points of discussion follow:

Q. Is there a relationship between large amounts of milo in a ration and wet droppings?

A. Dr. Hill said that some poultrymen think so, while others do not. Generally, he said, higher energy concentration in a feed favors lower total moisture because of lower total excretion.

Mr. Rooney, an extension poultry specialist, said that there are strain differences in types of droppings. He observed that the droppings problem is both economic and social, with pressure for more fly control measures in some counties.

Q. Are all of the growth factors in forages in the unidentified factor portion?

A. Dr. Kohler noted that there are many known growth factors in forages, such as folic acid, carotene and vitamin A. We know how much of the known factors there are in forages, but there is a lot of work to be done on the unidentified factor part, he said. (He had earlier discussed research on estrogens in alfalfa.)

Q. Why are there differences in recommended levels of dehydrated alfalfa in other areas as compared to the West?

A. Dr. Kohler said that in the East, freight is a factor. But the unidentified factor content is a consideration, and "quite a bit" of dehy is used. Also, he noted, higher dehy levels are desirable for pigmentation.

Q. Do medications in poultry feeds cause resistance to the drugs?

A. One person said that antibiotics that kill bacteria are less likely to build up resistant organisms.

Q. How about mineral levels in broiler feeds?

A. A suggestion was use of just under 1% or 1% calcium and 0.4% inorganic phosphorus; total phosphorus would be 0.6 to 0.8%.

Q. What is the minimum per cent of calcium in potentiated high-antibiotic feeds for laying hens?

A. Dr. Wilgus said that for medical purposes, with potentiation, calcium level should be reduced to the minimum. There may be difficulties, and one firm recommends this approach: A regular ration is fed the birds. Then, at night, a potentiated feed with no added calcium is put over the regular feed. In the morning, the bird fills up on the potentiated feed and then eats the regular feed.

It was stated during the discussion that some persons try a high antibiotic level and low calcium but may run into trouble in two or three days. Another person, in the audience, said that he (from the East) had not heard about potentiation of antibiotics for layers in the East. Still another person said that he had used 0.4% calcium for three days and that the procedure was successful.

For turkeys and broilers, said Dr. Wilgus, one can use calcium sulfate for potentiation purposes, but this is not good with layers.

Q. What is the best calorie-protein (C/P) ratio in laying rations?

A. Dr. Hill noted that there is a range of uncertainty on protein. For the type of rations he is familiar with, the ratio would be about 80-84, but this is usually only a description of a ration. Protein level may be 16% in high energy rations. One can't readily have a ratio number.

With fryers in hot weather, it was said, there is less indication that the birds respond to higher protein and lower energy.

Dr. Hill pointed out that an energy value number measures the "octane power" of a ration, not how much will be built into products.

Q. When corn is 25¢ per cwt. higher than milo, is there a justification for using corn?

A. There would be no justification, said Dr. Kratzer.

If pigmentation is a factor, there would be a premium for corn, Dr. Wilgus noted.

Q. How much zinc should there be in a turkey poult ration to be sure the zinc requirement is being met?

A. Dr. Kratzer said that 50 ppm or less would take care of the problem. He noted that Norris and Davis recommended 25 ppm additional zinc. The zinc situation also applies to meat birds and laying hens.

Mr. Halloran commented that during the conference, work had been mentioned which indicated zinc oxide was not as good as zinc carbonate in poultry rations. Titus has said, Mr. Halloran noted, that there is no difference in results if good zinc oxide is used. Dr. Wilgus said that pure zinc oxide is as well utilized as zinc carbonate. Stanley Maurer of The Grange Co. said they had obtained a better response from zinc sulfate than zinc oxide.

Q. What are some of the things that egg producers are doing wrong?

A. Mr. Rooney said that feeding is part of some problems. In cool weather, if birds stay on a low energy ration, there may be difficulty. Also, lighting is sometimes neglected. It is

needed for stimulation, not just to light the feed and water.

Q. Should a coarse, medium or fine ration be used for layers?

A. Mr. Rooney observed that if a ration is ground too finely, the feed gums up when the bird eats it. If it is coarse, the birds may pick out certain ingredients; for one thing, pigmentation may be affected.

Q. Would there be an advantage in feeding metal chelates so that the metal would be absorbed?

A. Dr. Davis said the problem is to get a metal chelate so that zinc would be absorbed and then utilized.

Q. Can a single trace mineral mix be used for all poultry?

A. Dr. Davis said there is no universal mineral supplement, although there may be one for a given area. Dr. Wilgus commented that the feed manufacturer likes to have the least possible number of mineral mixtures. Dr. Davis said that with poultry, a standard mineral mixture probably would be satisfactory 90% of the time. Others said that a standard mixture has worked out well.

Q. What about estrogens in alfalfa?

A. There are five estrogens in alfalfa, said Dr. Kohler, and coumestrol accounts for about 80% of the total amount. Coumestrol also has been found in green peas and beans. There is something in soybean meal, too. There is no problem of toxicity.

Q. How is the lysine requirement as a per cent of protein for turkeys affected after 12 weeks of age?

A. Dr. Kratzer said that lysine requirement decreases a little faster than the decrease in protein for a while.

Q. How would it be to express feed efficiency as calories to gain rather than feed to gain?

A. This would be a better way to compare experiments in different locations, Dr. Hill said, but it still is a relative thing.

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Pelleted Ration Helps Boost Milk Production

WALLER, TEXAS — A feed company in Texas, Tin Top Ranch, at Waller, recently reported on a farm experiment testing the feeding of pelleted concentrates and pelleted Coastal Bermuda grass for milk cows. The results were outstanding, according to feed plant owner Homer Jones.

An eight-day test was conducted with two Holstein milk cows. The customary 9% protein mixed dairy feed, supplemented with cottonseed meal, hulls and low-grade hay, was replaced with a 16% protein pelleted feed and Coastal Bermuda pellets. Average net return from the two cows jumped 26%, according to the report.

During the test period, the cows were given no hay, and were confined to a dry lot instead of being allowed to graze.

Prior to the test, the cows were returning a net value of 82¢ a day. On Oct. 31, after being on the 16% protein ration for two weeks, the cows were returning, through increased milk production, a net value averaging $1.12, according to Mr. Jones.

Original purpose of the test was to determine how quickly dairy cows can be put on pelleted feed without hurting production. In this test, the two cows were switched over to the pellets immediately with no interruption in milk production.

"The fact that no gradual changeover is necessary, and that such a remarkable increase in milk production is possible, should be of great interest to all dairy farmers," said Mr. Jones.

To Lease Building

LUVERNE, MINN.—A warehouse depot for the Walnut Grove Products Co. is under construction here and scheduled to be completed by Dec. 15. Harry Janssen, northern Rock County representative for Walnut Grove feeds, reported that the building will be leased to the company.

RESEARCH

(Continued from page 10)

relatively little in propionic acid. A difference was observed in response to the diets used, and when sodium and potassium (as bicarbonate) were added, enhanced absorption of $C^{14}O_2$ into the fatty acids was shown in the in vitro studies. It appeared that the major role of CO_2 in the formation of ruminal volatile fatty acids was as a precursor of propionate and subsequently valerate. Acetate, on the other hand, was a major precursor of butyrate and valerate.

Interest in the use of bicarbonate additions to ruminal diets has been stirred by work of this nature, and more especially since additions of Na and K bicarbonate have been shown to enhance absorption of tracers into the ruminal volatile fatty acids. Since top animal performance has been related to amounts of fatty acids, especially propionic, in both milk production and weight gains of steers (Balch and Rowland, 1959; Ensor et al., 1959) it seems reasonable to predict further experiments to increase propionic acid production of ruminants. Practical application of this has already been taken advantage of in the development of the "no roughage" beef cattle fattening rations. Such fattening diets appear to promote higher propionic acid levels than do more conventional roughage containing fattening rations.

EFFECTS

(Continued from page 60)

analysis of feed credit needs to be emphasized. In fact, in my opinion, it is the most important single factor in the entire financial structure of any of our integrated customers.

Working Capital

The extension of credit on fixed assets creates a major fallacy in that the gearing of volume operations to physical facilities rather than working capital places the emphasis on the wrong part of the balance sheet; fixed assets as such do not earn money. They are merely tools which must be used and which can only be used if sufficient working capital is available to make them operative. As a result, the volume of total operations is controlled directly by working capital rather than the capacity of the tools that are available.

Fixed Assets and Credit

The last two or three years have produced example after example of what a pitfall fixed assets can be in the extension of feed credit. I am sure in your experience, all of you can point to times when large credit lines based on adequate net worth, largely in fixed assets, caused serious losses to you or other feed manufacturers during periods of economic distress.

Fixed assets acquired by the applicant may be used, and should be used in his operation, but it is not contemplated they will be needed to pay bills. This can only be done by sale of the assets which automatically reduces the size of the business or destroys it completely. In other words, our investments should be paid back as the result of the use of fixed assets, not from their sale.

Most producers use their fixed assets to obtain credit in the form of mortgages on their property; time payment plans on automobiles and trucks; budget and installment plans covering purchases of many commodities, etc. Many times these are not available for feed credit and it is questionable if they ever should be.

I recognize the necessity sometimes of providing a certain amount of capital to either expand or modernize facilities and, in some cases, to provide livestock for specific purposes. This operation can be dangerous, but, if it is not confused with feed credit and is set up on a workable pay-out basis, there may be justification for such loans to selected recipients.

Generally speaking, however, fixed assets are valuable to the financial analyst only if working capital disappears and liquidation of a business or collateral to secure a payment program is needed.

Production Schedule Basis

Credit extension for the purchases of feed cannot be geared to the total fixed assets in any business. We must realize the day of high profits and long margins has passed. Today, only a small profit is made per unit with total profit resulting from the sale of thousands of units each year.

It is, therefore, imperative that credit be extended on sensible terms. It must be extended on a production schedule basis on available working capital rather than fixed assets which could be used. By production schedule, I mean cash receipts. A customer's ability to pay is established by dates for the sale of meat, milk, or eggs. Therefore, our total investment must be tailor-made to fit this schedule. It cannot be established by the financial statement valuation of fixed assets.

Profit-Motivated

At this point we might point out that lenders prefer to lend money to businesses that are profit-motivated rather than production efficiency-motivated. For instance, many efficient poultry operators have serious financial problems today because they went over-board on financing projects to lower their costs rather than to gear their operations according to available working capital.

In business parlance, living beyond one's income is overtrading, and overtrading always indicates poor financial management. It is just as much overtrading when too many of the assets are salted away in fixed plant equipment and machinery as it is to do too much business on limited capital.

What is the effect of all this on your own organizations? Financial stewardship, within your own organizations is becoming of greater importance as our customers become larger. Each feed manufacturer must decide where he fits into the present puzzle, and financial management must be prepared to advise top management as to the soundest course to follow.

What will your credit policy do to your balance sheet and your own lines of credit?

Will it freeze assets into your accounts receivable, run you low on working capital? Will it create large bad debt and collection expense?

Let us remember our business also must be profit-motivated and that automatically places the responsibility for staying in business on management. Businesses, production motivated, lose sight of the "hole in the back door" through which benefits from high production are shoveled out in the name of bad debts resulting from poor credit.

Cash Flow Analysis

We have established the fact that a large amount of reasonable credit is a prerequisite to successful farm operators today. Therefore, it behooves us to look at applicants for feed credit as a banker looks at a credit risk. Make a cash "flow" analysis to guide your extension of credit. It is the operating funds (working capital) which produce the profits or losses directly. It is difficult to conceive of profits without adequate working capital. In fact, it is difficult to conceive of a going business without it.

It is possible working capital may be provided solely by creditors including feed companies. If so, the losses belong to creditors, including feed companies.

The feed credit man is in a dilemma. He finds himself forced to balance the financial needs of his customers against the needs of his own company. This area of balance should never be forgotten because of sales pressures which insist that the satisfying of the customer's every need is all-important. Such satisfaction is a matter of expediency rather than principle and such unplanned reactions often bring unhappy results.

The lending officer, the industrial credit man, or the manager of the budget, must first be a professional, a constant performer with high standards and high objectives.

He must be possessed of all the facts necessary to make proper, intelligent, constructive decisions. After he has all these facts, he must remember there are very few, if any, hard and fast rules used in credit analysis, rather, individual cases are treated on the basis of their merits.

The individuals within this industry who resist change are the ones who will be forced into "getting out." People in any profession go broke when they fail to observe and respect trends.

Today's Credit Man

In that connection, today the credit man is a new type of person in comparison to the credit man of 15 to 25 years ago. No longer is he a man with average intelligence, an accounting background often obtained from experience, a determination to work to succeed and through the use of demands for payment on invoice date, earn a living.

Today he needs intelligence, a willingness to work, the ability to recognize good husbandry, but in addition he must understand the financial problems of the producer of animal food products. He must know the fiscal end of business and have the training and ability to analyze an investment on its merits.

Most important of all he must recognize the financial needs of the integrated farm businessman are many times greater than that of the retail feed dealer. He must convince his management that receivable totals will multiply on his books and that during the next decade these companies will survive who recognize they are financing their customers even to the point of being in business with some of them, and no longer are selling merchandise on credit.

In Conclusion

No longer do we have a small local bag feed business financed by local capital on short terms.

We now have a big business on a wide geographical basis, purchasing in tons and carloads, financed more and more with feed company capital. Sometimes complete pay-out never comes, but the advances we make remain as permanently revolving working capital as long as we are satisfied the customer is solvent and remains so.

In my opinion, the feed manufacturers who remain in business will be those with substantial amounts of available working capital professionally invested in the operations of well-managed, commercial, integrated, agricultural businesses.

BEACON MILLING—The Beacon Milling Co., division of Spencer Kellogg & Sons, Inc., recently held a three day sales and service school for dealers in Cayuga and Auburn, N.Y. Fifteen dealers and dealers' representatives attended the meeting along wth five company advisors. The three days were devoted to poultry service, dairy service and direct sales and marketing problems. In the photo above, taken at the school, are, from the left: John Anderson, Jr., Anderson Farm Supply, Inc., Portland, Conn.; Wallace McDaniels, C. B. Cummings & Sons Co., Norway, Maine; Frank Fisher, Fisher & Son Co , Inc., Malvern, Pa., and Robert E. Miller, Beacon's director of marketing.

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CONSULTATION—Slide-tape recording describing opportunities for careers in agriculture and agribusiness are examined by officials of the Midwest Feed Manufacturers Assn., the Missouri Grain & Feed Assn. and the University of Missouri College of Agriculture. Feed men will present the material at school and community meetings in Missouri. Pictured, from left, are: Sam B. Shirky, associate dean of the college of agriculture; Larry Alley, Pay Way Feed Mills, Inc., Kansas City, vice president of the Midwest association; Dr. E. R. Kiehl, University of Missouri; Curtis Carter, Carter Feed Milling Co., Odessa, Mo., president of the Missouri association, and Lloyd Larson, MFMA executive vice president.

'Opportunity Knocks' Career Presentation Given Broad Distribution in Several States

KANSAS CITY — "Opportunity Knocks . . . at Home Plate," a visual presentation designed to help the feed industry tell the story of its importance to the public and its career opportunities to high school and college students, has received enthusiastic acceptance in the several states in which it has been shown.

Midwest Feed Manufacturers Assn. is the producer and sponsor of the basic project featuring color slides and accompanying narration. Agricultural colleges and feed manufacturers are participating in the project by preparing additional color slides and descriptive material for insertion in the basic presentation. Thus, the program can be "tailor-made" for specific audiences, like a freshman agriculture class at the University of Arkansas or a community club in a town within the trade area of a Kansas feed manufacturer.

Purpose Defined

Bill Larson, who prepared "Opportunity Knocks," described the purpose of the visual presentation this way:

"The basic idea of the presentation is to let people, young and old, in a manufacturer's territory, know the role he plays in providing the 'home plate' from which we eat every meal.

"Designed also to be a student recruiter, the local presentation incorporates the local state land-grant college and exposes the program of study and preparation youth must follow to become a member of the feed industry and on the agribusiness team.

"Feed men can use their own sales and dealer organizations to put the presentation to work in high schools, service clubs and other groups, and this also can help build better dealer and customer relationships" (Feedstuffs, July 23).

Approving Comments

Kansas State University was the first school to prepare a "local segment" for use in conjunction with the basic slide presentation.

Dr. C. P. Wilson, Kansas State's dean of resident instruction, said: "We will be needing increasing numbers of alert, well-educated scientists, technologists and business men to man this great feed industry. Young men and their parents need to know of the opportunities for careers in the industry.

"The pictures and commentary entitled 'Opportunity Knocks . . . at Home Plate' can be a very effective means of presenting these opportunities to young men and their parents through arrangements for showing in local high schools, chambers of commerce, service clubs and other organizations. We at Kansas State are proud to have a part in this program."

For use in Arkansas, the Arkansas Feed Manufacturers Assn. has purchased two sets of "Opportunity Knocks." One has been presented to the University of Arkansas and the other retained by the association for distribution in Arkansas.

Also, Texas A&M College has a copy of the slide tape. Oklahoma State University is producing material for a slide presentation in its state. Similar material is in production at the University of Missouri and at the University of Nebraska.

For Rent or Purchase

Feed manufacturers in each of the states will be able to purchase or rent sets of the slide tape which have been adapted to their particular area for showing to various groups.

A Kansas feed manufacturer who has purchased a set of the Kansas version of "Opportunity Knocks" says he will use it to show to high school vocational agriculture students and at various community meetings.

Dr. D. W. Mullins, University of Arkansas president, noted that the presentation "is a means of developing better relationships between universities and industry."

"The production," Dr. Mullins continued, "illustrates why youth of today must be prepared for tomorrow. It makes the point with great clarity that industry is based on highly scientific and mechanized processes with continued research being a necessity."

Dr. Randall J. Jones, dean of resident instruction at Oklahoma State University, reports that his institution is developing slides and script to be used with the basic MFMA material at showings in Oklahoma. "There is full agreement on our part that every means available should be used to acquaint the public with the field of agribusiness and career opportunities for young men," he said.

Lloyd Larson, executive vice president of Midwest, recently presented an "Oscar" to Dr. G. M. Watkins, Texas A&M, for his contribution to the "Opportunity Knocks" presentation (Feedstuffs, Nov. 5).

SLIDE PREVIEW—Nebraskans are given an advance look at slides which appear in a visual presentation describing the role of the feed industry in agriculture and what it offers in the way of career opportunities. Left to right are: Lloyd Larson, executive vice president, Midwest Feed Manufacturers Assn., sponsor of the basic project; Harold E. Fouts, G. E. Conkey Co., Nebraska City; Dr. F. E. Eldridge, dean of resident instruction, University of Nebraska; Zane Fairchild, Honeggers' & Co., Lincoln, Neb., and Dr. E. F. Frolik, dean of the university's school of agriculture.

SLIDES AND SCRIPT—Representatives of the Midwest Feed Manufacturers Assn., Kansas City, show members of the Oklahoma State University slides and script used in the presentation of "Opportunity Knocks . . . at Home Plate," a visual presentation sponsored by MFMA and presented through the cooperation of agricultural colleges. Left to right are: Bill Larson, Kansas City; Robert Marshall, Superior Feed Mills, Inc., Oklahoma City, Midwest vice president; Dr. Randall Jones, university vice president for resident instruction in agriculture, and Dr. John West, head of the university's department of poultry husbandry and chairman of the school's committee on careers in agriculture.

PHOTOGRAPHER AT WORK—Talking about what University of Arkansas scenes to include in "local segment" of "Opportunity Knocks" slide presentation developed by Midwest Feed Manufacturers Assn. are, from left, Fred K. Darragh, Jr., president and general manager of Darragh Co., Little Rock, Ark., and president of MFMA; Dr. E. I. Stephenson, University of Arkansas, and Dr. John White, University of Arkansas vice president for agriculture.

WASHINGTON

(Continued from page 1)

Elks Lodge in Mt. Vernon, Dr. I. L. Kosin discussed Russia and showed slides taken by him during his two recent trips to the Soviet Union.

Energy Nutrition

Dr. F. W. Hill, chairman of the department of poultry husbandry, University of California, discussed energy nutrition in poultry. Dr. Hill reviewed the development of a metabolizable energy measurement and determination of metabolizable energy values of various feed ingredients, work conducted largely at Cornell University.

He said that the metabolizable energy values are highly reproducible and are either unaffected or influenced only slightly by such factors as age, level of food intake, hormone treatments and nutrient balance. "Studies to date have indicated that ME values are directly additive, that is, that the value of a diet can be accurately computed from the individual ME values of its components," Dr. Hill said.

Dr. Hill also discussed the use of metabolizable energy values in formulating rations. The quantity of feed consumed by birds is regulated by the energy content of the ration, and therefore, the economic worth of a ration, suitably balanced with respect to all recognized nutrient requirements, is directly proportional to its energy concentration.

"The balanced ration which can be produced at the lowest cost per calorie will be the most efficient economically," he said.

"The principles of energy nutrition appear deceptively easy in their application to poultry nutrition. But several important exceptions and unanswered questions should be recognized."

Dr. Hill mentioned that certain fats, particularly vegetable oils, stimulate rate of growth in chicks, greater than estimated by their metabolizable energy values. Another exception mentioned was the inability of animals under some circumstances to regulate energy consumption. This is particularly true for heavy breeder hens fed diets high in energy content.

British Columbia Studies

Prof. Jacob Biely, head of the department of poultry science at the University of British Columbia, discussed highlights of poultry nutritional research in his department. Prof. Biely covered a variety of subjects such as relative feeding values of corn, wheat and wheat screenings, beneficial effects of enzymes in feeds with different grains, nutritional factors affecting blood cholesterol level of growing chickens, and effect of dietary fat levels on longevity of caged layers.

Equivalent growth with turkeys was obtained when fed diets containing Canadian feed wheat screenings, as compared to rations containing corn. Dietary enzymes markedly improved barley obtained from the U.S., but did not have much effect on barley and wheat produced in Canada.

Prof. Biely reported on the effect of feeding diets containing from 2½ to 12½% fat from day of age on mortality in chickens kept for over three years. Mortality in this test was slightly higher for birds fed the 12½% fat ration.

Mortality from leucosis and kidney disorders was about the same, but there was a higher mortality from liver disorders among birds fed the higher fat level.

Another interesting study reported by Dr. Biely was the effect of various fish liver oils on blood cholesterol levels in chicks fed diets containing 1% added cholesterol. Two fish liver oils, lingcod liver oil and halibut liver oil, fed at the 10% level markedly depressed cholesterol level even below that of birds fed no supplemental cholesterol in the basal diet. A high vitamin A content in these oils appeared to be responsible for part of the depressing effect, but vitamin A was not the entire answer.

Economy of Pellets

Dr. I. A. Dyer, department of animal science at Washington State, discussed the economy of pelleting feeds for ruminants.

Some of the points made were: (1) Pelleting apparently does not increase the nutritive value of feeds for ruminants, (2) pelleting of grains is unnecessary and generally unprofitable, (3) all pelleted rations for ruminants should not be used if the roughage content is below 20%, (4) if roughage makes up more than 40% of the ration, increases in gain and feed efficiency from pelleting are substantial.

Milk Composition

How milk composition is affected by feeds was discussed by Dr. T. H. Blosser, department of dairy science, Washington State. "The cow exerts strong tendencies to secrete milk of constant composition under a wide variety of feeding conditions. If she is inadequately nourished, she will usually reduce milk flow rather than change the composition of her milk," Dr. Blosser said.

Antibiotic Usage

Factors influencing antibiotic usage in feeds were covered by Washington State's Dr. James McGinnis, department of poultry science. He presented results showing that when antibiotics are used continuously in the same quarters, their effectiveness in stimulating growth soon diminishes.

"The results of our work would suggest that a change in the antibiotic routinely used might be advantageous, particularly when the premises are not de-populated between broods," he said.

Soybean Products

Soybeans and soybean products in poultry feedings was a second topic discussed by Dr. Hill. It is well known that soybeans must be heat-treated to overcome growth inhibitors, but that overheating will result in lowered chick growth.

Metabolizable energy content of soybeans heated to various degrees was also reported by Dr. Hill. He concluded that the conditions optimal for promoting most rapid growth and highest feed efficiency of birds were also optimal for developing highest metabolizable energy value.

There is considerable interest in the possible use of unextracted soybeans or full-fat soybeans in poultry feeds. Dr. Hill reported that in studies with ground unextracted soybeans, a metabolizable energy value was obtained that was 90% of what was expected considering the metabolizable energy value of the extracted soybean meal plus soybean oil.

Further studies showed that the lower value was due to incomplete utilization of the soybean oil contained in the beans. Absorbability of the oil in the beans was 75 to 80%, but 95% for soybean oil added directly to the feed. In addition, it has been found that flaking of the soybeans allows better utilization of the oil than simply grinding the beans. Dr. Hill reported that there is a plus factor in vegetable oils such as soybean oil for chick growth. When properly heated, flaked soybeans are used in a diet, a growth stimulation is obtained when compared to a low-fat simplified basal diet.

Dr. Hill also reported on the use of raw and heat-treated soybeans by laying hens. Dr. Fisher and associates at Rutgers had previously reported that hens were able to use unheated soybean flakes as a source of protein. Dr. Hill reported, however, that the metabolizable energy value of raw soybean flakes is substantially less than that of properly heated materials and that the difference between the raw and properly heated materials for the hen was about the same as that previously found for chicks.

The problem of egg shell quality was reviewed in detail by Gordon E. Bearse, western Washington experiment station. He suggested the following as some things that can be done to help solve the problem: (1) Stock should be purchased from breeders that are known to be working on the egg shell problem. (2) Diseases should be controlled by practicing good management and using a sound vaccination program. (3) A ration containing the NRC recommended amounts of the various nutrients should be fed and extra calcium should be provided by means of free choice oyster shell or limestone grit. (4) Only young birds, not over 12 months in lay, should be kept because egg shell quality declines with age. (5) If temperatures above 70° F. are common, insulation and general cooling methods should be adopted. In an experiment conducted at Puyallup, Mr. Bearse reported no beneficial effects on egg shell quality from adding vitamin C or zinc to practical rations.

Research Reports

For the third year at this conference, a number of brief research reports were presented by W.S.U. staff members. The following are summaries of these reports:

Effects of concentrate to roughage ratio on performance of cattle—Dr. Dyer: Fattening cattle gain at a rate directly proportional to the energy intake when all other factors are equal. Rations containing no hay have been fed to fattening cattle, but results have been variable. Some high energy rations have increased gain, while others have reduced it.

Effect of feeding antibiotics on milk production and general health of dairy cows—Dr. F. R. Murdock, western Washington experiment station: Results of field tests and more carefully controlled experiments are somewhat conflicting regarding the effect of antibiotics on milk production. In general, the more carefully controlled experiments have not indicated significant increases in milk production through antibiotic feeding.

Nutritive value of milk replacers containing high levels of whey—Dr. Blosser: In an experiment involving 48 calves, a milk replacer diet containing 50% dried whey was used. Supplements of terramycin, slaked lime, tallow, and carob flour were used singly and in various combinations in an attempt to control diarrhea expected on high whey diets. Calves fed a replacer diet containing tallow and slaked lime grew at a significantly faster rate than calves on a replacer containing slaked lime and carob flour. Otherwise, there was no significant difference among the diets. Feed efficiency was not significantly affected by the diet variables. Calves had more diarrhea than is normally experienced when fed whole milk. Calves fed a replacer diet containing fat and slaked lime did not scour at all, but considerable scouring was observed on other treatments.

Enzymes and kelp for cattle—Dr. Dyer: Three experiments with beef cattle were conducted with Agrozyme (enzyme mixture) and kelp. The Agrozyme resulted in increased performance in cattle in each instance at the beginning of the feeding period and in two of the three tests throughout the feeding period. The kelp increased gains from 0.19 to 0.35 lb. in each test.

Unidentified factors for reproduction — Dr. Leo S. Jensen, poultry science department, Washington State: Studies on a factor necessary for maximum egg weight were briefly reviewed. Vegetable oils are particularly good sources and part of the effect appears to be due to linoleic acid. Pullets coming into production were placed on practical diets with and without 5% corn oil. Eggs from hens fed diets containing corn oil increased in weight more rapidly and the pullets came into production at a more rapid rate.

In studies with turkey breeders, little or no improvement in egg production and hatchability was obtained by supplementing a diet with dehydrated alfalfa meal, dried whey product, herring fish meal or brewers' yeast. However, when certain drugs were included in the diet, a marked response to unidentified factor supplements was obtained.

Use of full-fat soybeans for growing turkeys—Dr. McGinnis: In an experiment with growing turkeys from 8 to 20 weeks of age, a diet containing autoclaved, ground, unextracted soybeans gave the same results in growth and feed efficiency as a diet containing regular soybean oil meal plus tallow. There was little or no difference between birds fed diets containing soybeans that were steam rolled before autoclaving versus ones that were simply ground before autoclaving.

Fish meal for broiler feeds—Dr. L. R. Berg, western Washington experiment station: Several tests were conducted to determine if more rapid and efficient growth is obtained by adding 2½ to 5% herring fish meal to practical diets for broilers.

In most tests, the replacement of part of the vegetable protein in the diet with fish meal resulted in small increases in growth rate. In some tests, however, no benefit was obtained. Evidence was obtained that the growth response to the same fish meal samples may vary with different samples of corn and soybean oil meal.

Calcium and phosphorus requirements of developing turkeys — Dr. Jensen: Results of three years of experiments with developing turkeys have shown that the minimum requirement for developing turkeys is no higher than 0.6% total phosphorus and 0.6% calcium.

Proceedings of the 13th Washington Animal Industry Conference are available by sending $2 to Leland Strait, coordinator of short courses, Washington State University, Pullman, Wash.

TOP OF THE HOPPER

(Continued from page 2)

said, a production school should actually be thinking in terms of more time, more homework, a bigger budget.

There is an intense desire on the part of bankers to keep up, Mr. Johnson said, and they are willing to pay the bill so that they will not be caught asleep. Yet, it was his observation that for everything new in banking there are 10 new things in the feed business, which is more complicated than banking.

There is a great desire in the feed industry to keep-up with changes, and this extends into other fields, too—not just production, Mr. Johnson pointed out. The impression was left that more feed men should be thinking about the possibilities of more in the way of intensive schooling for management and supervisory personnel in the industry.

♦ ♦

A DAMAGE SUIT brought by a feed customer in Connecticut recently points up the need to be cautious around machinery and equipment. The customer claimed he injured his hand in a gear assembly when he thrust his hand through an opening of a bulk delivery truck, attempting, he said, to check the quality and quantity of feed being delivered. He sought $25,000 damages from the feed company.

The FEED MARKET

PRICE QUOTATIONS, MARKET TRENDS
OF PRINCIPAL INGREDIENTS

A AND D FEEDING OIL

Chicago: Demand fair; trend steady; supply ample; straight A feeding oil, with 10,000 units vitamin A per gram, 7@7¼¢ a million units of vitamin A, l.c.l., packed in 55 gal. drums, f.o.b. Chicago, drums included.

Minneapolis: Demand fair; supply ample; 10,000 A 31¢ lb.; 300 D, 2,250 A 17⅝¢ lb.; 300 D, 1,500 A 16¢ lb.; 300 D, 750 A 15¾¢ lb.

Boston: Demand and supply steady; 400 D, 3,000 A 19¼¢ lb.; 300 D, 3,000 A 19¢; 300 D, 2,250 A 17¼¢; 300 D, 1,500 A 16¢; 300 D, 750 A 14¢; 75 D, 750 A 13⅛¢.

ALFALFA MEAL

Cincinnati: Demand fair; trend steady; supply adequate; 17% dehydrated, 100,000 vitamin A $56@57.

Chicago: Demand quiet; trend higher; supply light; dehydrated, 17% protein, 100,000 units vitamin A $52.

Philadelphia: Demand slow; supply fair; 17% $62.25.

Ft. Worth: Demand of dehydrated good, suncured fair; supply sufficient; sacked: dehydrated 17% 100,000 A $57.10, truck or rail; suncured: 13% ¼-in. grind No. 1 $48, truck; 15% fine ground, dry $50, with 2% fat added $52, rail or truck.

Memphis: Demand fair; trend steady to higher; supply ample; dehydrated, 17% protein, guaranteed 100,000 units vitamin A $52.

Boston: Demand slow; supply plentiful; dehydrated, 17% $61 for pellets; suncured 13%, sacked $51.

Seattle: Demand fair; trend firm; supply good; 15% protein suncured $51, 150,000 A unit dehydrated $72, both delivered truck loads, sacked.

Buffalo: Demand fair to poor; trend steady; supply fair; $62.60, sacked, Boston.

Portland: Demand fair; supply ample; trend unchanged; $47@71, sacked.

Los Angeles: Demand moderate; trend steady; supply adequate; dehydrated meal, 17% protein, 100,000 A $51.50@52; dehydrated pellet meal, 17% protein, 100,000 A $53@54; suncured meal, 15% protein $45@46; suncured crumbles, 15% protein $47@48.

Omaha: Demand fair; trend slow; supply good; 17% dehydrated, 100,000 A units, bulk pellets $45; sacked meal $50, Omaha basis.

St. Louis: Demand slow; trend firm; supply limited; suncured, 13% fine, sacked $48; dehydrated, 17%, 100,000 A pellets, demand fair, trend upwards, supply ample, bulk $51.

Kansas City: Demand fair; trend steady; supply ample; 17% dehydrated alfalfa, 100,000 A on arrival, pellets $46@48, reground pellets $48@49; 18% dehydrated alfalfa, 125,000 A on arrival, pellets $48@51, reground pellets $49@52; 20% dehydrated alfalfa, 150,000 A on arrival, pellets $48@52, reground pellets $50@53; suncured alfalfa, demand improved, supply adequate, 13% pellets $35@37; No. 1 ¼-in. $40, sacked.

Minneapolis: Again, no change from preceding week; 17% dehydrated, 100,000 A units, reground pellets steady at $51, delivered Minneapolis; oiled reground pellets $53.

ANIMAL FAT (STABILIZED)

Boston: Demand and supply steady; tallow 5¾¢ lb.; yellow grease 4¾¢ lb.

San Francisco: Demand fair; supply ample; bleachable fancy 6¼¢ lb.; yellow grease 4¾¢ lb.

Ft. Worth: Demand good; supply sufficient; prime tallow, tank cars 5¾¢ lb.; drums 7¼¢ lb.; f.o.b. north Texas packing plants with returnable drums.

Louisville: Demand fair to good; trend steady; supply good; white tallow 5¾¢ lb., bleachable white fat lb., yellow grease 5¼¢ lb., all in tankers.

Ogden: Supply ample; $5.50 cwt.

Chicago: Demand fair; trend steady; supply ample; tank truck or carlots, bleachable fancy tallow $5.87½ cwt., yellow grease $5.12½ cwt.

Salisbury, Md.: Demand excellent; supply limited; 5¾¢ lb.

Kansas City: Demand good; trend strong; supply available; prime stabilized tallow 5¾@5¾¢ lb.

Atlanta: Demand good; trend steady; supply limited; 5¢ lb., f.o.b. Alabama and Georgia processing plants.

St. Paul: Demand remains better than last year at this time; supplies no more than ample; price same as last week; bleachable fancy 5¾¢ lb., f.o.b. producer's plant.

BARLEY FEED

Los Angeles: Demand slow; trend unchanged; supply adequate; standard rolled $3 cwt., standard ground $3 cwt., both sacked.

BENTONITE (SODIUM)

Chicago: Demand fair; supply ample; trend steady; f.o.b. Wyoming and South Dakota shipping points: 200 mesh $14 and net $13.75; fine granular (80 to 100 mesh) $14.25 and net $14; granular, 20 mesh $16.50 and net $16.25.

BONE MEAL (STEAMED)

Cincinnati: Demand fair; trend easy; supply adequate; $85, sacked, Cincinnati.

Boston: Demand and supply steady; $100.

San Francisco: Demand good; supply ample; $75, sacked.

Ft. Worth: Demand good; supply sufficient; $100, sacked, f.o.b. Ft. Worth local manufacture.

Louisville: Demand slow; trend easy; supply light; $90@95, sacked.

Chicago: Demand quiet; trend firm; supply fair; $90, sacked.

Seattle: Demand good; trend firm; supply limited; $92, sacked, f.o.b. car Seattle.

Buffalo: Demand fair; trend strong; supply light; $97, sacked.

Portland: Demand fair; supply ample; trend unchanged; $95@97.50, sacked.

Los Angeles: Demand fair; trend unchanged; supply limited; imported $80.75, 20 ton lots, sacked.

BREWERS DRIED GRAINS

Cincinnati: Demand poor; trend steady; supply fair; $53.

Boston: Demand active; supply light; 26% $60.

Ft. Worth: Demand light; supply limited; sold out for November.

San Francisco: Demand fair; supply ample; $51, sacked.

Louisville: Demand and supply good; trend strong; $58, sacked, up $1.

Chicago: Demand good; trend higher; supply moderate; 26% protein $47@47.50.

Philadelphia: Demand slow; supply light; trend unsettled; $60.

Milwaukee: Demand fair; trend strong; supply limited; $48.50 bulk, $56.50 sacked.

Buffalo: Demand fair; trend steady; supply poor; $60, Boston.

Los Angeles: Demand and trend steady; supply adequate; $51.

St. Louis: Demand good; trend firm; supply limited; $46.50.

BREWERS DRIED YEAST

Cincinnati: Carlots 11¢ lb.; 5 ton lots 11¢ lb.; ton lots 11⅝¢ lb., all sacked.

Boston: Demand and supply steady; 11¢ lb.

San Francisco: Demand fair; supply good; 10¢ lb., sacked.

Chicago: Demand fair; trend steady; supply ample; 9½@10¢ lb., carlots, sacked; 9¾@12½¢ lb., l.c.l.

Milwaukee: Demand fair; trend steady; supply ample; 10⅛@12⅛¢ lb., ton lots, sacked.

St. Louis: Demand fair; trend firm; supply ample; 9⅛@10¢ lb., carlots, sacked; 10⅛¢ lb., ton lots; 11⅛¢ lb., less than ton lots.

Pittsburgh: Carlots 10¢ lb.; 5 ton lots 11¢ lb.; ton lots 11½¢ lb., all sacked.

New Orleans: Carlots 10¢ lb.; 5 ton lots 11¢ lb.; ton lots 11½¢ lb., all sacked.

New York: Carlots 9½¢ lb.; 10 ton lots 10¢ lb.; 5 ton lots 10½¢ lb., ton lots 11¢ lb., all sacked, f.o.b. New Jersey.

Louisville: Demand slow; trend firm; supply good; 10@10½¢ lb., sacked.

Buffalo: Demand fair; trend steady; supply ample; $9.05 cwt.

Seattle: Demand slow; trend steady; supply ample; $12 cwt., sacked.

Los Angeles: Demand good; 10¢ lb., 5 ton lots; 11¢ lb., 1 ton lots; 12¢ lb., less than ton lots; all sacked.

Portland: Demand slow; trend steady; supply ample; 11@12¢ lb.

Omaha: Demand slow; trend good; supply plentiful; 10½¢ lb.

BUTTERMILK (CONDENSED)

Boston: Demand and supply steady; 4¼¢ lb.

San Francisco: Demand fair; supply good; $5 cwt., drums.

Louisville: Demand near zero; supply zero; trend steady; $4.25 cwt. in paper drums.

Ogden: Supply good; $4.40, 100 lb. drum.

Chicago: Demand moderate; trend firm; supply fair; 500 lb. barrels $3.25@3.50 cwt.

Philadelphia: Demand slow; supply fair; $4.25 cwt.

Los Angeles: Demand slow; trend unchanged; supply adequate; 5½¢ lb., 100 lb. lots; 4½¢ lb., 500 lb. lots; both in barrels.

CALCITE CRYSTALS AND FLOUR
(All prices net, sacked, including freight)

New York: Crystals $16.28, flour $10.28.
Buffalo: Crystals $17.11, flour $11.11.
Toledo: Crystals $18.96, flour $12.96.
Boston: Crystals $17.63, flour $11.63.
Lime Crest, N.J.: Crystals $11.50, flour $5.50.

CALCIUM CARBONATE

Cincinnati: Demand fair; trend steady; supply adequate; $7@7.50 cwt.

Chicago: Demand fair; trend steady; supply ample; fine grind, plain, 100 lb. bags $9.54; bulk, in hopper cars $7.54; bulk, in boxcars $8.04; granular grind $1 premium.

Minneapolis: Fine grind, 50 lb. bags $12.75; 100 lb. bags $12; bulk, boxcar $10.50; bulk, hopper $10; coarse grind $1 premium, delivered Minneapolis.

Seattle: Demand and trend steady; supply good; $14, ex-warehouse, sacked.

Los Angeles: Demand fair; trend steady; supply adequate; flour $10.15, 20 ton cars, meal $11.15, 20 ton cars, both sacked.

COCONUT OIL MEAL

San Francisco: Demand fair; supply ample; solvent $52, expeller $69.

Portland: Demand slow; supply plentiful; trend unchanged; $62.75.

Seattle: Demand fair; trend steady; supply ample; solvent type $68, f.o.b. car Seattle, sacked.

Los Angeles: Demand moderate; trend steady; supply ample; copra cake $63, November-December-January.

CONDENSED FISH SOLUBLES

Boston: Demand quiet; supply ample; $37.50@40.

CORN GLUTEN FEED AND MEAL
(All quotations for all cities are bulk basis, sacked basis $5 more)

Minneapolis: Feed $45.60, meal $62.60.
Atlanta: Feed $49, meal $66.
Birmingham: Feed $47.60, meal $64.60.
Boston: Feed $50.50, meal $67.50.
Chicago: Feed $39, meal $56.
Cleveland: Feed $46.90, meal $63.90.
Denver: Feed $49.20, meal $66.20.
Ft. Worth: Feed $47.70, meal $64.70.
Indianapolis: Feed $44.20, meal $61.20.
Kansas City: Feed $39, meal $56.
Louisville: Feed $46.60, meal $62.60.
New Orleans: Feed $48.90, meal $65.90.
New York: Feed $50.10, meal $67.10.
Norfolk: Feed $49.50, meal $66.50.
Philadelphia: Feed $49.70, meal $66.70.
St. Louis: Feed $39, meal $56.

CORN OIL MEAL

Louisville: Demand dull; trend steady; supply light; $53.55, sacked.

Cincinnati: Demand fair; trend steady; supply adequate; $45.

COTTONSEED OIL MEAL

Louisville: Demand fair; trend easy; supply normal; old process $61.60, new process $58.60, both sacked.

Chicago: Demand quiet; trend steady; supply ample; Memphis basis, hydraulic $54.

Ogden: Supply average; 41% $63@65.

Philadelphia: Demand slow; supply fair; $66.

Wichita: Demand fair; supply ample; 41% old process $58.50, sacked.

Boston: Demand cautious; supply light; 41% $70.70, sacked.

Cincinnati: Demand poor; trend steady; supply adequate; $57.

Memphis: Demand fair; trend steady to weaker; supply ample; prime 41% protein, old process $51.50; new process, 41% solvent $49.

Ft. Worth: Demand fair on meal, good on hulls; supply sufficient; 41% old process $61, f.o.b. mills Ft. Worth; carlots, solvent 2% fat added $56.50, November-December, delivered Ft. Worth; pellets $2 additional; hulls $19.

San Francisco: Demand fair; supply ample; 41% $58.50; 44% $62.

Seattle: Demand fair; trend weak; supply ample; $66, f.o.b. car Seattle.

Buffalo: Demand poor; trend lower; supply adequate; $73.50, sacked, Boston.

Atlanta: Demand fair; trend steady; supply good; 41% $57, South Carolina and Georgia; $55, north Alabama; $53, Mississippi and Tennessee producing mills.

Portland: Demand sluggish; trend easier; supply plentiful; $61.10.

Los Angeles: Demand limited; trend unchanged; supply ample; $54.

Omaha: Demand poor; trend firm; supply ample; 41% solvent $57.50, delivered Omaha.

Kansas City: Demand poor; trend weaker; supply ample; 41% old process $52.50@53; solvent process $49@49.50, Memphis.

St. Louis: Demand slow; trend firm; supply ample; $54.50.

CURACAO PHOSPHATE

New York: Minimum 14% phosphorus $46.50 sacked, $43.50 bulk, f.o.b. New Orleans, Jacksonville and Philadelphia.

D ACTIVATED ANIMAL STEROL (POWDERED)

Cincinnati: Demand fair; trend steady; supply ample; 1,500 ICU 11@12¢ lb.; 3,000 ICU 10¢ lb., warehouse.

Kansas City: Demand fair; trend steady; supply ample; 1,500 ICU 9¾¢ lb.; 3,000 ICU 11¢ lb.

D ACTIVATED PLANT STEROL (POWDERED)

Chicago: Demand fair; supply ample; 4,000,000 U.S.P. units per lb., 15¢ lb. in ton lots, less than ton lots 17¢ lb.; 12,000,000 units per lb., 5 tons to a carload 28¢ lb., ton lots and less 30¢ lb.

DEFLUORINATED PHOSPHATE

Coronet, Fla.: Minimum phosphorus 18%, minimum calcium 31%, maximum calcium 34%, maximum fluorine .18%; guaranteed uniform analysis; carload $66.25, sacked; 100 lb. multiwall bags, bulk $63.25; truck load $67, sacked, in 100 lb. multiwall bags, bulk $64, f.o.b. Coronet, Fla.

Tupelo, Miss.: Minimum phosphorus 14%, minimum calcium 28%, maximum fluorine .14% $57.07, f.o.b. Tupelo in 100 lb. multiwall bags, $54.07 bulk.

Wales, Tenn.: Minimum phosphorus 18%, minimum calcium 33%, maximum 36%, maximum fluorine .18% $71.80 (or $3.99 per unit of P), f.o.b. Wales in 100 lb. multiwall bags, $3 less in bulk.

Butte, Mont.: Minimum phosphorus 18%, minimum calcium 32%, maximum calcium 36%, maximum fluorine .18%, $81 (or $4.50 per unit of P), f.o.b. Butte, 100 lb. multiwall bags; bulk $78; truck lots of less than 10 tons $10 more, bagged or bulk.

Houston: Minimum phosphorus 19%, minimum calcium 32%, maximum calcium 36%, maximum fluorine .19% $74.35 net ton, f.o.b. Houston, 100 lb. multiwall bags; $71.35 bulk.

Cincinnati: 18% phosphorus $81.02; 14% phosphorus $71.03, f.o.b. Cincinnati.

Portland: Demand fair; trend steady; supply ample; $93.50@95 for product carrying a minimum of 18% phosphorus, 31.5% calcium and a maximum of 0.01% fluorine; $93@93.50 dock for a minimum of 10 ton lots.

DICALCIUM PHOSPHATE

Trenton, Mich.: 18½% P $33, bulk, boxcar/hopper car; $36, bagged, in carloads or truck loads; $96, bagged, in less than carload lots; 21% P, $94.65, bulk, boxcar/hopper car; $97.65, bagged, in carloads or truck loads; $107.65, bagged, less than carload; all prices f.o.b. Trenton, freight equalized with nearest producing point.

Chicago: Bulk 18.5% phosphorus, carlots or trucks $33; 20,000 lb. or more $36 net ton in 100 lb. papers; less than 20,000 lb. $96, basis Chicago Heights, Ill., or Nashville, Tenn.; 21% phosphorus, carlots or trucks, bulk $94.65; 20,000 lb. or more, per net ton in 100 lb. papers, $97.65 and less than 20,000 lb., $107.65, basis Chicago Heights, Ill., or Nashville, Tenn.

Bonnie, Fla.: Minimum phosphorus 18½%, granular, $36 (or $4.65 unit of P), freight equalized from nearest producing point, carload basis; bulk carloads $3 less; in truck loads of less than 10 tons, $10 more. Western slope prices, for delivery at established railroad stations and by truck at regular feed mixing plants: California, Arizona, Nevada and Utah, $89.90; Washington, Oregon, Montana and Idaho, $107.15; bulk carloads $3 less; truck loads less than 10 tons, $10 more.

Cincinnati: 18½% phosphorus $92.15, f.o.b. Cincinnati.

Columbia, Tenn.: Minimum phosphorus 18.5%, minimum calcium 24% $36, f.o.b. Columbia, in 100 lb. multiwall bags; freight equalized with nearest producing point, carload basis; bulk $3 ton less.

Texas City, Texas: Minimum phosphorus 18.5%, minimum calcium 20%, maximum calcium 23%, maximum fluorine .12%; carload and truck load $80.50, sacked in 100 lb. multiwall bags, bulk $77.50, f.o.b. Texas City.

DISTILLERS DRIED GRAINS

Louisville: Demand good; trend steady to strong; supply light; December prices expected to be up $3@5; bourbon grains: light $57, dark $58, solubles $73, all sacked.

Philadelphia: Demand fair; trend unsettled; supply very light; dark $67.

Boston: Demand active; supply very tight; dark $67, light $66.

Cincinnati: Demand fair; trend steady; supply adequate; $62.

San Francisco: Demand fair; supply ample; solubles $79, sacked.

Seattle: Demand fair; trend firm; none available; $69, delivered truck lots, sacked.

Buffalo: Demand good; trend steady; supply fair to poor; $68, Boston.

DRIED BEET PULP

Ogden: Supply ample; $39@45.

San Francisco: Demand good; supply fair; $44.80.

Ft. Worth: Demand fair; supply sufficient; plain $59.25, sacked, 50 lb. bags, November.

Boston: Demand slow; supply improved; $57, sacked.

Atlanta: Demand fair; trend steady; supply limited; $60.11, sacked, delivered.

Buffalo: Demand and supply fair; trend steady; $58, sacked, Boston.

Seattle: Demand good; trend steady; supply ample; $49, delivered carlots, sacked.

Los Angeles: Demand slow; trend steady; supply moderate; $49.90.

Portland: Demand improving; supply plentiful; trend steady; $47.60, sacked (decline due to lower freight rate).

DRIED BUTTERMILK

Ogden: Supply good; $17.25 cwt.

Louisville: Demand dull; trend steady; supply light; 13@13½¢ lb., sacked.

Chicago: Demand slow; trend easier; supply ample; medium acid $11.50@12 cwt., sweet cream $11.50@12 cwt., both sacked.

Boston: Demand light; supply short; 14¢ lb.

San Francisco: Demand fair; supply ample; 13½¢ lb., sacked.

Buffalo: Demand fair; trend steady; supply limited; $12.60 cwt.

Los Angeles: Demand fair; trend firmer; supply ample; 13¾@14¢ lb., sacked.

DRIED CITRUS PULP

Boston: Demand fair; supply tight; $52 sacked, f.o.b. Florida.

San Francisco: Demand and supply fair; meal $48, sacked.

Atlanta: Demand good; trend steady; supply limited; pulp $47.50, sacked, f.o.b. Florida processing plants; meal $42.50, sacked, f.o.b.

Los Angeles: Orange pulp $43, nominal.

DRIED SKIM MILK

San Francisco: Demand and supply fair; 14½¢ lb., sacked.

Boston: Demand good; supply short; 12½¢ lb.

Cincinnati: Demand fair; trend steady; supply adequate; 12@13¢ lb., sacked.

Louisville: Demand slow; trend steady; supply ample; 12@13¢ lb., sacked.

Chicago: Demand quiet; trend steady; supply ample; $11.75@12.15 cwt., sacked.

Ogden: Supply ample; $15.15 cwt.

Philadelphia: Demand slow; supply fair; $13 cwt.

Minneapolis: No change from last week; demand good; supply tight; $12.25@12.50 cwt.

Buffalo: Demand fair; trend steady; supply ample; $13.40 cwt.

Los Angeles: Demand slow; trend unchanged; supply adequate; 15¢ lb., less than ton lots; 14¾¢ lb., ton lots, both sacked.

Omaha: Demand good; trend strong; supply short; 12¢ lb.

DRIED WHEY

Chicago: Demand quiet; trend easier; supply fair; $4.85 cwt., sacked.

Louisville: Demand dull; trend steady; supply normal; $4@6.25 cwt., sacked.

NOTE: Quotations on feed ingredients shown in these and adjoining columns are wholesale prices, per ton, bulk, for prompt delivery, unless otherwise noted. They are the latest quotations available from Feedstuffs correspondents and are not necessarily those in effect on date of publication. The prices represent fair average trading values and do not necessarily represent extreme low or high levels at which individual sales might have occurred. A descriptive summary of supply and demand factors prevalent in the feed market appears on page 2.

Ogden: Supply good; $6.90, sacked.
Philadelphia: Demand slow; supply fair; $6.25 cwt.
Cincinnati: Demand fair; trend steady; supply adequate; $5.75 cwt., sacked.
Ft. Worth: Demand fair; supply adequate; carlots, standard $5.25, sacked, delivered Ft. Worth; ton lots $5.50, f.o.b. warehouse Ft. Worth.
San Francisco: Demand steady; supply good; $5.25 cwt., sacked.
Boston: Demand and supply good; 5¼¢ lb.
Kansas City: Demand fair; trend steady; supply adequate; regular or partially delactosed $5.25 cwt., sacked.
Omaha: Demand and trend good; supply plentiful; $5.50 cwt.
Los Angeles: Demand fair; trend steady; supply adequate; $5.18 cwt., carloads; $5.35 cwt., l.c.l.; both sacked.
Portland: Demand fair; supply adequate; trend unchanged; $5.60 cwt.
Seattle: Demand steady; trend easy; supply good; $5.85 cwt., ex-warehouse, l.c.l.
Minneapolis: Good demand; price firm at $5.50 cwt.

FEATHER MEAL (HYDROLYZED)

Boston: Demand slow; supply ample; $66.
Salisbury, Md.: Demand spotty; supply excess; $62, f.o.b.
Atlanta: Demand fair; trend steady; supply good; $62, f.o.b. Alabama and Georgia processing plants.
Ft. Worth: Demand fair; market trend weak and unsettled; supply plentiful; $60@64, delivered Ft. Worth; $2@3 higher, sacked.
Los Angeles: Demand fair; trend steady; supply adequate; 90¢ a unit of protein, sacked.

FISH MEAL

Cincinnati: Demand fair; trend steady; supply adequate; $108.60.
Boston: Demand good; supply adequate; 60% $92.
San Francisco: Demand slow; supply ample; $1.40 a unit of protein.
Ft. Worth: Demand fair; supply sufficient; sacked: 65% protein Peruvian $93.50, November; 60% protein menhaden $99, delivered Ft. Worth.
Ogden: Supply ample; $1.05 a unit, f.o.b. Coast; 65% $105@108.
Louisville: Demand slow; trend steady; supply light; $110@115, sacked.
Chicago: Demand poor; supply ample; trend easier; sacked: menhaden, East Coast $88@90, Gulf $86@90; menhaden scrap, East Coast $84@86, Gulf $82@86; Canadian herring meal $1.55 a unit of protein.
Buffalo: Demand fair; trend steady; supply ample; 60% protein menhaden $103 bulk, $108 sacked.
Portland: Demand fair; trend weak; supply larger; $1.45 a protein unit, sacked.
Seattle: Demand good; trend firm; supply fair; $1.55 a unit protein, f.o.b. truck Vancouver, B.C., sacked (Canadian production).
Milwaukee: Demand limited; trend unchanged; supply adequate; $112, sacked, Chicago basis.
Los Angeles: Demand poor; trend steady; supply light; local production, 60% protein $1.50 a unit, sacked.
Omaha: Demand and trend good; supply plentiful; 60% menhaden $105, f.o.b. Omaha.
Minneapolis: Demand fair; supply ample; steady market; West Coast 60% blended $118, sacked, delivered; Canadian herring $1.55 a unit, West Coast, subject to production.

HOMINY FEED

Louisville: Demand very dull; trend stronger; supply light; $47, sacked, up $1; but very little demand in this market.
Chicago: Demand fair; trend higher; supply moderate; $36.
Memphis: Demand poor; trend weak; supply ample; white $41.80, yellow $41.80.
Boston: Demand slow; supply ample; $46.

LINSEED OIL MEAL

San Francisco: Demand fair; supply ample; $70.
Ft. Worth: Demand slow; supply sufficient; 34% protein, solvent $68.50 November, $69 December.
Boston: Demand slow; supply light; $68.70.
Cincinnati: Demand poor; trend steady; supply adequate; new process $50.50; old process $58.50, Minneapolis.
Louisville: Demand dull; trend steady; supply light; old process $76.50, up 50¢; new process $71, unchanged; both sacked.
Chicago: Demand quiet; trend irregular; supply ample; Minneapolis basis, solvent $52.50, expeller $58.
Philadelphia: Demand fair; supply light; 34% $70.
Wichita: Demand fair; supply ample; 34% $75, sacked.
Seattle: Demand fair; trend steady; supply good; 34% protein (Montana) $85, delivered carloads, sacked.
Milwaukee: Demand limited; trend firm; supply fair; expeller $68.50@70, solvent $64; both Chicago basis.
Portland: Demand slow; supply adequate; trend unchanged; $83.75, sacked.
Los Angeles: Demand limited; trend steady; supply small; local production, 31% protein $71, November-December-January.
Omaha: Demand fair; trend firm; supply good; 34% solvent $57.50; 32% old process $63, Omaha basis.
Kansas City: Demand slow; trend steady; supply ample; solvent process $52.50@53; old process $57@57.50, Minneapolis.
Minneapolis: No change from last week; solvent $52.50, old process $58.

MALT SPROUTS

Chicago: Demand slow; trend steady; supply fair; sacked: No. 1 uneven bags $42.50.

MEAT AND BONE SCRAPS

Chicago: Demand slow; trend steady; supply fair; 50% protein $72.50, sacked.
Ogden: Supply ample; $72.50, 50% protein, sacked.
Louisville: Demand and supply good; trend steady; $70@75, sacked.
Wichita: Demand heavy; supply about offsets demand; $80, sacked, f.o.b. plant.
Boston: Demand and supply steady; $1 a protein unit; converted 50% $62.50.
Ft. Worth: Demand fair; supply sufficient; meat and bone, 50% $64 bulk, $67 sacked, f.o.b. Ft. Worth.
Cincinnati: Demand and supply good; trend steady; 50% meat and bone scraps $66, Cincinnati.
San Francisco: Demand fair; supply ample; $1.40 a unit of protein.
Seattle: Demand good; trend firm; supply ample; $1.50 a unit protein, ex-processing plant, sacked.
Buffalo: Demand fair; trend advancing; supply light; 50% meat scraps $70 bulk, $75 sacked.
Portland: Demand good; trend steady; supply adequate; $72.50, sacked.
Los Angeles: Demand moderate; trend unchanged; supply ample; 50% protein $1.40 a unit.
Omaha: Demand and trend good; supply plentiful; $70.
Kansas City: Demand fair; trend steady; supply ample; 50% $65.
St. Louis: Demand fair; trend strong; supply ample; $66.
St. Paul: Demand fair; supply ample; $68@72.

MILLFEED

Minneapolis: Supplies plentiful; demand slow, but prices seem to have bottomed out and gained strength; bran steady at $37.50, sacked; middlings up 50¢ to $35, sacked; red dog up 50¢ to $38, sacked.
Kansas City: Demand fair; trend steady; supply ample; sacked bran $34.50@35, shorts $33.50@34; bulk bran $28@28.50, shorts $28.50@29, bulk middlings $28@28.50.
Wichita: Demand fair; supply sufficient; Nov. 21, basis Kansas City: bran $34.75@35.25, shorts $35.75@34.25, sacked; both bran and shorts declined $2.50, compared with the preceding week.
Ft. Worth: Demand good on the decline; offerings sufficient; bran bulk $39, burlaps $43; gray shorts bulk $38.50@39, burlaps $42.50; bulk middlings $38.50, delivered Texas common points; bulk bran $1 lower, sacked bran $1 lower, bulk shorts $2.50@3 lower, sacked shorts $1 lower and middlings $2 down, compared with previous week.
Chicago: Demand quiet; trend irregular; supply fair; standard bran $34, standard midds. $35; red dog $41.
St. Louis: Demand fair; trend easy; supply ample; sacked bran $39.50, shorts $38.50; bulk bran $33, middlings $23.
Omaha: Demand and supply good; trend firm; sacked bran $35; sacked gray shorts $35; bulk standard midds. $30, all Omaha basis.
Cincinnati: Demand fair; trend steady to lower; supply adequate; bran $40, middlings $43.
Boston: Demand cautious; supply fair; bran $45, middlings $46.
Buffalo: Sales quiet, middlings in better demand than bran but under pressure from hominy and corn; mixers, buying hand-to-mouth, either busy buying cheaper grain or their bins are jammed with them; sacked differential on bran and middlings narrowed to $5 from $6; bulk bran ended unchanged, sacked off $1; bulk middlings down $2, sacked declined $1 under the influence of other feeds; red dog, bulk and sacked, off $3; quotations Nov. 23: bulk bran $35.50@36, sacked $40.50@41; bulk middlings $37@38, sacked $42@43; bulk red dog $43@43.50, sacked $47.50@48.
Philadelphia: Demand and supply fair; bran $44, standard midds. $45.50, red dog $51.
Memphis: Demand poor; trend weak; supply ample; wheat bran $35.30, gray shorts $35.80, standard midds. $35.30.
Louisville: Demand fair; trend weak; supply good; bran $44.80, mixed feed $44.30, shorts $45.30, all off $2@4, all sacked.
Seattle: Demand fair; trend easy; supply ample; $37, delivered common transit points, carlots.
Portland: Demand slow; trend weak; supply larger; $36@37.
Ogden: Supply ample; to Utah: red bran and mill run $37, middlings $42.
San Francisco: Demand good; supply fair; millfeed $46.50, red dog $49.
Los Angeles: Standard mill run $46.50@47, limited demand, easier trend, supply small; red bran $48@48.50, demand slow, trend easier, supply adequate.

MINERAL FEED

Ft. Worth: Demand fair; supply adequate; all-purpose granules $90, block $70; mineral phosphorus 5% granules $106, block $113; cattle-sheep mineral 7% phosphorus granules $109, block $107; hog mineral phosphorus 3½% granules at $87, phosphorus 2% $77 (all in 50 lb. paper bags).
San Francisco: Demand steady; supply good; all-purpose with iodine $70, sacked.
Sioux City: 50 lb. mineral blocks 8.2% phosphorus $92; 7.5% phenothiazine sheep mineral blocks $4 each.
Ogden: Supply ample; $113 ton in 50 lb. blocks; $103 ton, granular, 50 lb. bags.
Wichita: Demand heavy; supply sufficient; all-purpose with iodine, 50 lb. blocks $97.50, 100 lb. bags $92.50, f.o.b. plant.

MOLASSES

Louisville: Demand fair; trend steady; supply normal; 13¢ gal., tank car lots, f.o.b. Gulf ports.
Boston: Demand and supply steady; 14¢ gal., in tank cars.
Memphis: Demand fair to good; trend steady to higher; supply ample; blackstrap 13¢ gal., tank car, f.o.b. New Orleans and $29.23 ton, delivered Memphis, truck.
San Francisco: Demand and supply good; $23.75, f.o.b. cars, Richmond, Cal.
Ft. Worth: Demand good; supply sufficient; blackstrap 13¼¢ gal., f.o.b. Houston; delivered Ft. Worth truck $29.36, seller's market price on date of shipment.
Cincinnati: Demand fair; trend steady; supply adequate; 13¢ gal., New Orleans.
Seattle: Demand and supply good; trend firm; $24.75, f.o.b. Seattle, tank truck lots.
Buffalo: Demand and supply fair; trend higher; 15¢ gal., f.o.b. Albany.
Atlanta: Demand fair; trend steady; supply limited; citrus $20, f.o.b. Florida producing plants.
Milwaukee: Demand fair; supply ample; trend unchanged; blackstrap 12½¢ gal., f.o.b. New Orleans.
Los Angeles: Demand good; trend steady; supply adequate; $22.50, f.o.b. tank cars; $22.75, f.o.b. tank trucks.
Kansas City: Demand slow; trend firm; supply ample; blackstrap 12¾@13¢ gal., f.o.b. New Orleans.
St. Louis: Demand slow; trend firm; supply adequate; 13½¢ gal., tank cars, New Orleans.
Minneapolis: No change from last week; blackstrap $32, tank truck, delivered; beet $29, blend $30.50.

OAT PRODUCTS

Louisville: Demand slow; trend easy; supply normal; reground $29.40, rolled $77.90, feeding $73.40, pulverized $49.90, crimped $63.40, all sacked.
Philadelphia: Pulverized white, demand slow, supply fair $47; domestic, demand slow, supply light $28.50; Canadian oat feed, demand fair, supply very light $33, sacked.
Chicago: Demand quiet; trend irregular; supply adequate; reground oat feed $20; No. 1 fine ground feeding oatmeal $70; feeding rolled oats $74.
Boston: Demand slow; supply spotty; white pulverized $54.50, sacked; reground oat feed $25.50.
Memphis: Demand poor; trend steady to higher; supply light; 3½% protein, reground oat feed $29.30.
Ft. Worth: Demand slow; supply sufficient; 10% protein oat millfeed $43.20; reground $28.80, sacked.
Cincinnati: Demand poor; trend lower; supply adequate; pulverized white oats $44@49.
Minneapolis: Declining prices appear to have bottomed out, all items steady to stronger; feeding rolled steady at $71, sacked; feeding oatmeal up 50¢ to $61.50, sacked; pulverized steady at $40, sacked; crimped up 50¢ to $57, sacked; reground oat feed steady at $24, nominal, sacked.

POTASSIUM IODIDE (U.S.P.)

Chittenango, N.Y.: Demand good; trend firm; supply adequate; standard trace mineral blends: 90% U.S.P. K.I. and 10% calcium stearate, magnesium carbonate or calcium hydroxide: 100 lb. drums $1.42 lb.; 200 lb. and up $1.40 lb.; delivered basis.
Cincinnati: Demand good; trend steady; 90% KI in calcium stearate or carbonate mixtures: 250 lb. drums $1.35; 200 lb. in 100 lb. drums $1.35; 100 lb. drums $1.38; 25 lb. drums $1.41, f.o.b. Cincinnati.

PEANUT OIL MEAL

Atlanta: Demand fair; trend steady; supply limited; 45% $53 for expeller, $51 for solvent, f.o.b. Georgia and Alabama producing mills.
Milwaukee: Demand and supply fair; trend unchanged; 26% $44 sacked, $40 bulk, both Chicago basis.

POULTRY BY-PRODUCTS

Salisbury, Md.: Meal demand fair; supply ample; $67, f.o.b.
Atlanta: Demand fair; trend steady; supply ample; $64, f.o.b. Alabama and Georgia processing plants.
Los Angeles: Demand good; trend steady; supply adequate; $1.20 a unit of protein, sacked.
Boston: Demand good; supply light; $73.
Ft. Worth: Demand good; supply extremely scarce; 55% protein $75@77.50, nominal, sacked, f.o.b. north Texas plants.

RICE BY-PRODUCTS

Atlanta: Demand and supply fair; trend steady; $41.50 sacked, delivered.
Los Angeles: Demand slow; trend unchanged; supply adequate; California production, high fat content, bran $49@50, sacked.
San Francisco: Demand good; supply ample; bran $40, sacked.
Ft. Worth: Demand good; supply moderate; rice bran $33@34, f.o.b. south Texas rice mills, sacked; hulls $4.50, sacked, f.o.b. November delivery.

SCREENINGS

Buffalo: Demand and supply fair; trend steady to lower; ground, sacked $35.50, New York, lake and rail; unground, bulk $28.50, New York.
Minneapolis: Short run in distress Canadian dropped nearby price $3 to $20, deferred shipments still very light and price steady at $22; hardly enough supplies around to make a domestic market, but trading in prevailing ranges—lights $8@12, mediums $13@20, heavies $21@30; 15% flax screenings steady at $35.
Cincinnati: Demand good; trend steady; supply tight; unground grain screenings $24@26.50.
Chicago: Demand slow; trend firm; supply fair; ground grain $32.50; Canadian $26.

SOFT PHOSPHATE
(Sacked, delivered)

Atlanta: $20.65.
Buffalo: $25.50.
Chicago: $24.96.
Cincinnati: $23.64.
Des Moines: $25.42.
Kansas City: $25.07.
Memphis: $22.28.
Minneapolis: $26.12.
Philadelphia: $24.51.
St. Louis: $24.32.

SORGHUMS

Ft. Worth: Demand fair; supply sufficient; No. 2 yellow milo $1.87@1.88 cwt., delivered Texas common points.
Ogden: Supply ample; milo $40@41.

SOYBEAN OIL MEAL

Minneapolis: Further weakness reported; 44% steady to 50¢ lower at $38@38.50, Decatur; 50% down 50¢ to $43, Decatur.
Seattle: Demand good; trend easy; supply ample; $66.40, delivered, carlots.
Atlanta: Demand fair; trend steady; supply good; 44% $51.60, delivered.
Milwaukee: Demand fair; trend weak; supply good; $44, Decatur.
Portland: Demand sluggish; trend weak; supply plentiful; $66.10.
Los Angeles: Demand slow; trend easier; supply ample; $66.10.
Omaha: Demand good; trend firm; supply ample; 44% $50, delivered Omaha.
Kansas City: Demand slow; trend steady to weak; supply ample; 44% solvent process $41@42, Decatur.
St. Louis: Demand slow; trend easy; supply abundant; 44% $46.
San Francisco: Demand fair; supply ample; $66.50.
Ft. Worth: Demand good; supply sufficient; 44% $53.20@55 November, $53.70@55.50 December, $55.20@58 January; 50% $58.20@59.40 November, $58.70@60 December, $60.20@62 January.
Memphis: Demand fair; trend steady to higher; supply ample; prime 44% solvent $48, f.o.b. Memphis.
Cincinnati: Demand fair; trend lower; supply adequate; $43, Decatur.
Boston: Demand cautious; supply plentiful; 44% $40, 50% $45, both f.o.b. Decatur.
Chicago: Demand poor; trend easier; supply ample; Decatur basis, 44% protein, unrestricted billing $43.50@44, ETL $39.50; 50% protein, unrestricted billing $48, ETL $44.50.
Philadelphia: Demand and supply fair; trend unsettled; 44% $41, Decatur.
Louisville: Demand fair; trend weak; supply good; $55.50, sacked.
Ogden: Supply ample; 41% protein $67@68, 50% protein $72@73.
Wichita: Demand fair; supply ample; 44% $60, 50% $65, sacked; 44% $57, 50% $62, bulk, f.o.b. Wichita.

TANKAGE

St. Paul: Demand slow; supply ample; $68@70.
Kansas City: Demand fair; trend steady; supply ample; 60% digester $67.50.
St. Louis: Demand fair; trend firm; supply good; $67.
Ft. Worth: Demand fair; supply sufficient; 60% digester $70, sacked, Ft. Worth.
Cincinnati: Demand fair; trend steady; supply ample; 60% digester $67.50, Cincinnati.
Wichita: Demand heavy; supply about offsets demand; 60% $80, sacked, f.o.b. plant.
Chicago: Demand slow; trend firm; supply ample; 60% protein $75, sacked.
Louisville: Demand and supply good; trend steady; 60% protein $70@75, sacked.

UREA FEED COMPOUND

Woodstock, Tenn.: Minimum 42% nitrogen, 262% protein equivalent; $100, bagged, f.o.b., freight equalized with nearest producing plant; bulk $96.
Lima, Ohio: Minimum 42% nitrogen, 262% protein equivalent $100, f.o.b. bagged.
Pryor, Okla.: Minimum 42% nitrogen, 262% protein equivalent; $100, f.o.b. bagged; $96, bulk, cars or trucks, freight equalized with nearest producing point.
New York: Minimum 42% nitrogen, 262% protein equivalent, $100, f.o.b. bagged; $96, bulk, cars or trucks, freight equalized with nearest producing point.
Belle, W. Va.: Minimum 42% nitrogen, 262% protein equivalent; $100, f.o.b. bagged; $96, bulk, cars or trucks, freight equalized with nearest producing point.

VEGETABLE AND ANIMAL FAT (HYDROLYZED)

Ft. Worth: Demand good; supply limited; 5¢ lb., f.o.b. south Texas area.

WHEAT GERM MEAL

Buffalo: Demand fair; trend steady to higher; supply fair to poor; commercial grade $64, sacked, f.o.b. Buffalo.
Minneapolis: Steady market; $62@63, jutes.

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Broiler Council Names Information Director

RICHMOND, VA.—William (Bill) Larson has been appointed director of information and publications for the National Broiler Council, it was announced by R. F. Frazier, executive vice president of the council.

Mr. Larson, from Kansas City, has had extensive experience in the field of publicity and public relations. Until recently, he was advertising and sales promotion manager for a heating and air conditioning firm, and prior to that he was with a public relations firm for three years. He also served as an information services officer for the U.S. Air Force.

In addition, Mr. Frazier noted, special assignments for the Midwest Feed Manufacturers Assn. included activities in the agricultural and trade association fields.

MINNESOTA MILL SOLD

BIXBY, MINN. — The Bixby Mill here, including all facilities and equipment, has been sold (effective Jan. 1, 1961) to Allen D. Johnson, Steele County's outstanding 1960 farmer award winner. In making his announcement, E. J. Benda, who has been owner of the mill, said that he will move to Hollywood, Fla., after the first of the year. Prior to owning and operating the Bixby Feed Mill, Mr. Benda was a salesman for the Russell-Miller Milling Co. and International Milling Co.

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CHICK HATCH

(Continued from page 4)

indicated by the late-in-the-season hatch expansion and the prospect for continuation of this expansion into 1961.

A larger November hatch of egg-type chicks than a year ago is in prospect. The number of eggs in incubators Nov. 1 was 14% larger than on Nov. 1, 1959. A similar trend is indicated for the broiler-type hatch. Eggs in incubators Nov. 1 numbered 13% more than a year earlier. Together, these figures add up to a 13% increase in the total number of chicken eggs in incubators Nov. 1.

Only the New England, east north central and Pacific states do not show more egg-type and broiler-type eggs in incubators Nov. 1 this year than on the same date last year. An increase of 65% in egg-type eggs was reported for east south central states, 56% for south Atlantic states and 55% for mountain states. Other increases ranged from 10 to 30%.

New England reported 21% fewer egg-type eggs in incubators Nov. 1 than a year earlier; east north central states showed a drop of 14%, and the Pacific states reported no change.

PROBLEMS

(Continued from page 1)

FDA representatives last week in Washington. Mr. Force, owner of Little Brothers Feed Co., Kalamazoo, Mich., and a member of the committee, reported briefly on its initial session with FDA during the Western Grain & Feed Assn. of Iowa convention here Nov. 21.

Mr. Force explained that the purpose of the meeting was to arrive at some understanding of FDA regulations "with the hope of being able to live with such regulations." Some 10 FDA officials participated, and they explained various regulations and why administrative decisions affecting the feed industry had to be made.

Discussion topics included these: The "grandfather clause," obligations and responsibilities of a manufacturer making a product containing a new drug, residue problems, custom mixing of medicated feeds, feed mill inspections and enforcement.

Mr. Force commented that more meetings are needed and possibly a change in the law.

B. C. Swanson Heads Western Association

DES MOINES — B. C. Swanson, Swanson Elevator, New Sharon, Iowa, was elected president of the Western Grain & Feed Assn. of Iowa at the association's convention here Nov. 21-22. Nearly 1,000 industry members were present for the meeting at Hotel Ft. Des Moines.

Mr. Swanson succeeds Robert B. Couch, Bates-Couch Grain Co., Des Moines.

Glenn Swartzendruber, Wieston Grain Co., Manson, was named vice president, and C. D. Whitaker, Swift & Co., Des Moines, treasurer. Robert Skinner is executive secretary, assisted by Kenneth Ludlow.

The following directors, all of Iowa, were elected: Bill Buser, Wraybill Dehydrating Co., Sloan; Fred Andresen, Northwestern Distributing Co., Mason City; Adrian M. Neil, Adrian M. Neil Co., Tama; Bill Harbor, Harbor Feed & Grain, Henderson, and Maurice Jones, Newhall Grain Co.

Mr. Couch, reporting an upsurge of 128 members to a total of 1,136, noted that the services of the association also have gained momentum. He also revealed plans to add another man to the staff. The association recently merged with the Feed Institute, and the new assistant would serve as a feed "branch" specialist, complementing the work of Mr. Ludlow in the grain area.

IOWA

(Continued from page 1)

for additional warehouse-building were Louis N. Roberts, director of the Grain Division, Commodity Stabilization Service, Washington; Joseph Haspray, director of the CSS regional office in Evanston, Ill., and Harold Brightwell, grain program specialist of the Iowa Agricultural Stabilization and Conservation office.

The dilemma of the grain men, uncertain about not only the future of storage rates but also the direction the new administration might take in building of government-owned storage, was demonstrated a number of times in questions and comments from the floor.

One member of the audience admonished a government official that he "should tell these people that they may have empty houses" under the new administration. "You have quite a responsibility in describing storage needs when you don't know Kennedy's program."

Most top officials of the USDA, including those at policy-making levels in the grain division, probably will be replaced when the new administration takes over the reins, association members were told. Meanwhile, planning for what appears to be ahead in the storage picture continues at both the present policy levels and at the administrative (career personnel) level. The result of this planning presents this picture:

"The 1962 marketing year would be the first opportunity for any great change in the storage outlook as a result of changes in farm legislation," Mr. Roberts said. "No legislation can change the 1961 wheat program. Winter wheat already is in the ground. Also, not much can be done to change the situation in feed grains in 1961. A crash program in Congress isn't likely."

The carryover increase is likely to continue through 1961, and this could cause a pinch in storage space, he said.

Total Needs

Asked to estimate total additional storage needs in 1961, Mr. Roberts said they could run as high as 500 to 800 million bushels, assuming favorable weather and crop returns. Although he qualified this estimate as "very uncertain" at this point, he indicated that he definitely feels the problem will be "quite large."

Pointing out that the CSS operates under the legal directive that private storage be utilized wherever practicable, Mr. Roberts commented, "Storage is your problem first and ours second."

Dean Daniels, McMaster Grain Co., Sioux City, Iowa, who moderated the panel, said at this point that he was "stunned' by the situation in which the grain trade has "taken a kicking around on rates and now is being called on to provide more storage."

Other government officials presented a more detailed analysis of grain production, price and other factors affecting the storage outlook and provided some long range estimates of needs on a regional and state basis.

The tentative nature of these estimates was pointed out by the speakers and also illustrated by some disparity in the figures cited. More definite ideas will be available in February or March, Mr. Brightwell said.

He estimated that about 100 million bushels of additional space will be needed in Iowa in order to handle the takeover of corn delivered to the government by producers in 1961.

Area Outlook

This summary of needs was provided by Mr. Haspray for the 19-state area (including Iowa) served by the Evanston CSS office: Space available now, 20 million bushels at bin sites, 20 million at country elevators and 10 million at terminals; space to be opened up through probable sales, 90 million bushels; new elevator construction, 40 million bushels in the country and 20 million at terminals.

The total of some 200 million bushels would be about 50 million bushels short of expected needs. "However, if the government takeover runs higher, we may have to beg people to build storage," he said.

Mr. Haspray indicated he was confident that additional storage will be built by the private trade, citing the experience of 1960 when some 40 million bushels were built in the area in spite of the cut in payment rates. Also, he noted, that while it was predicted that warehousemen would not sign the new UGSA, only two elevators (terminals) refused. Some 2,500 elevators now are under government contract in the area.

"I am confident that storage structures will be built," he said. "The question is whether there will be enough of them in the right places."

Some comments were made from the floor about the unfairness of present storage rates, coupled with requests for more space to be built. Mr. Daniels interposed: "Why did we sign? Because half a loaf is better than none. What else could we do?"

He noted that the industry is apparently "stuck" with present rates for at least another year but that plans are being made to renegotiate for 1962 storage.

The lively session also aired such things as comparative costs of government and private storage, demurrage charges on shipments of government grain while grade appeals are being made, slow response to inquiries sent to the CSS regional office and procedures to get grain about to go out of condition moving from elevators.

Former Official Reports

An address by Raymond J. Pollock, Mr. Roberts' immediate predecessor in the CSS grain post, delved into the storage situation and other matters having to do with government and industry relationships. The manager of Pollock Elevators, Norway, Iowa, resigned from the CSS position earlier this year.

Mr. Pollock praised his former coworkers in the grain division, and specifically Mr. Roberts and Mr. Haspray. He also lauded Ezra Taft Benson, secretary of agriculture, as a fine, honest, dedicated public servant, as well as True Morse, under-secretary.

"Now in between the secretary and

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under-secretary level and the grain division, there is a group that I cannot stand before you and defend. These are the policy advisers, known by a lot of different names and titles. . . . I thoroughly disagree with what this 'in-between' group recommended be done to the industry's storage payments and what they recommended be done on the storage payments for 'on farm' reseal payments."

Mr. Pollock charged that the secretary had too many in his policy-making and administrative areas who were not in agreement with his philosophy. "For those who would accept an assignment to work with this great secretary in all good faith and then refuse to carry out his plans for agriculture, I am sorry!" he said.

The farm platform selected by the voters definitely calls for strict controls over producers somewhere near full parity supports, Mr. Pollock said. Producers would turn down cold a program for strict, cross-compliance controls, he said, if they understood what they are voting for.

"My own analysis of the farm planks in either of the political platforms is that neither of them will help the farmer much but will only delay the inevitable and that is that the farmer must and will solve his own problems in his own way in a much more permanent, economical and satisfactory way than the government or the politicians will ever solve them," he said.

Storage Costs

Discussing two congressional reports that tried to point out that the government could store grain more economically than the storage industry, Mr. Pollock said, "I will only believe the contentions or claims of these two committees when a storage cost survey, identical to the one that was conducted by the department with the industry, is run on the storage costs of the government on grain in CCC storage facilities and then made available to the public in published form . . . I would be inclined to dare the department to run such a survey and publish it. It just could change the story on storage by the government by several cents per bushel."

Mr. Pollock said it is his feeling that the storage industry must again assume its share of the responsibility for storing excess production next year. "Where there is a real need for additional storage, in my opinion, the industry should furnish it. We cannot lick the problem by running away from it."

DELANEY CLAUSE

(Continued from page 1)

ences, Food and Drug Administration, Washington, and Dr. Thomas P. Carney, vice president in charge of research, development and control of Eli Lilly & Co., Indianapolis.

While it was evident that none of the speakers were wholly satisfied with the present situation, there were obvious differences of opinion which would indicate that any agreement on specific changes in the law might be hard to reach.

In his talk, Dr. Cannon said the Delaney legislation has raised a number of challenging problems, since it changes a scientific problem into a legal operation. He said that the law, although laudable in intent, is based on certain assumptions that may require years to validate or refute. Such a law, he said, is difficult to enforce and must be enforced on the basis of the spirit in which it was framed, namely to "play it safe" insofar as current information makes such a course possible.

Despite much work by experts, Dr. Cannon said, it must be admitted that the evidence for carcinogenesis by ingestion in meager, and this raises several important questions which cannot now be answered, and basically the law represents "legislation on assumption" much of which probably is based more on tradition than knowledge.

FDA Position

In explaining the position of the Food and Drug Administration, Mr. Roe stressed the lack of knowledge also and said that "nobody knows what levels of carcinogenic substances are safe for ingestion." "If that is the case," he said, "then it is not possible for FDA to say that any amount is safe" and FDA could not agree to any residue levels.

"There might be a threshold below which these substances are inactive," he said. "Scientists seem to think so. But the data is inadequate to show this and so FDA must refuse the introduction of any such materials in foods."

Mr. Roe said that in the absence of sufficient information to clear these materials, clearances could be given only in the cases where (1) there would be a great and important loss to the public by refusal to permit the use of the material and (2) there is no non-carcinogenic alternative. He added that Food and Drug officials at the present time are not aware of any suspect material which meets both of these criteria, and so no exemptions have been allowed on this basis.

Discussing the point that the Delaney clause limits the proper exercise of scientific judgment, Mr. Roe said that FDA would agree that it is dangerous to write such limitation into federal law and would oppose such restrictions. However, he said, the FDA view of the Delaney amendment is that this is not the case. Scientific judgment is involved in evaluating whether a chemical can induce cancer, although law deprives FDA of any discretion after such a finding. As a practical matter, he said, FDA could not permit the use of such substances anyway in the present state of knowledge, and so would have to administer the law pretty much in the same way whether the Delaney clause were in existence or not.

Since there is a lack of scientific information on specific carcinogenic substances, he added, the FDA has no valid basis to suggest to Congress that they be given discretion to permit the use of these materials at low levels. When full evidence of such safety at low levels is available, he implied that FDA would likely ask Congress for such an exemption.

Industry Problems

Dr. Carney said the Delaney clause is one of the most important, and one of the most discussed and one of the most misunderstood laws affecting the food and chemical industries that has been introduced since the original Food and Drug Act was passed. It is an absolute ban against the use of many materials that may induce cancer in laboratory animals, even though quantities and conditions of use in these laboratory experiments are in no way related to the intended use in man. The Delaney clause contributes no additional authority for public protection, since the Food and Drug Administration already has complete authority to prohibit the use of any materials believed to contribute to any public health hazard—cancer, heart disease, or any other malady, he said.

Evidence can be presented for the safety of materials now banned by the Delaney amendment, Dr. Carney said. Congress made a very sincere effort to write a law that would protect the health and welfare of the people of the U.S., and their objectives are commendable, he said. However, it was not the intent of Congress to prevent the use of chemicals that would be safe when used in regulated amounts and under proper conditions, and to stifle research in an area of critical importance in meeting the future food requirements of the country.

Cites Stilbestrol

Dr. Carney cited the case of stilbestrol, which has been fed to both man and animals for many years without evidence of cancer. He said there are 350,000 people today taking stilbestrol under physicians' instructions at levels as high as 120 milligrams a day, about a million times the amount that a meat eater could get even accidentally. Yet there is no evidence that these therapeutic doses have resulted in any cancer, and many cancer specialists are on record that there is no hazard and the danger is negligible. Even beyond this, there have been no residues of stilbestrol found in meat of animals fed this substance at commercial levels, Dr. Carney said, although stilbestrol implants have turned up cases, but implants are not forbidden by FDA regulations or law.

If everything were eliminated that has been reported as causing cancer, Dr. Carney said, "in any animal in any amount under any conditions," which is the present criteria, then it would be necessary to eliminate sunlight, coffee, tea, milk, whiskey, eggs, sugar, detergents, estrogens, alfalfa, clover, wheat and honey, among many other substances.

Dr. Carney said that the unscientific nature and unreasonableness of the Delaney clause will have a great effect on future research in work in the food field. He said it takes two to five years and a minimum of $750,000, often much more, to do necessary field trial work on new products, and if the law continues rigid and unyielding few companies will make such investments because the results cannot be used. He said his company had two products in the final stages of preparation, which could not be brought out under present conditions.

Proposes Change

Dr. Carney said that the law should be amended by the simple addition of the words "induce cancer in man or animal in amounts or under conditions reasonably related to intended use." Dr. Carney said that FDA should have this authority and discretion.

Questions

The three speakers comprised a panel which answered questions from the floor following the talks. During this discussion Mr. Roe said that the question of whether or not arsenicals are carcinogens could be considered as "yet undecided." Studies are underway on this point.

In reference to legal conditions which permit those using stilbestrol in feeds to continue to do so while new firms may not do so, and prohibit present formulas from being modified, Mr. Roe admitted that this was an incongruous situation and is one situation where the Delaney clause does impose a restriction on science.

DEATH

(Continued from page 1)

was started and the company grew from a line elevator firm into a widely known grain storage and merchandising corporation.

During World War II, Mr. McMillan served as chief of the allocations branch of the army service forces storage division in Washington, supervising supply depots. He had the rank of lieutenant colonel.

Mr. McMillan was also a director of the Soo Line railroad and a member of its executive committee, a director of First National Bank, Minneapolis, and the Great Northern Insurance Co.

He was a past director of Cargill, Inc., the company he served before joining Osborne McMillan Co. in 1921, and a past president of the Northwest Country Elevator Assn.

Survivors include his wife, Mabel; a daughter, Mrs. Elizabeth M. Ringer, Minnetonka; two sons, Howard I., Jr., Deephaven, and Cavour L., Wayzata; a sister, Mrs. Katherine M. Shephard, New York, and a brother, John R., Orono.

FLORIDA

(Continued from page 6)

against high levels of copper in the diet. He has also been able to show that there is a difference in the protective action of different protein materials. Thus he has been able to show that casein has less protection against an excess of zinc than has soybean oil meal.

Outstanding Discovery

"This action of protein with trace elements may be one of the outstanding discoveries with respect to trace element nutrition. Dr. Kratzer, working at Davis, Cal., published a report that soybean oil meal with a minimum intake of zinc, resulted in a zinc deficiency syndrome that could be overcome by feeding either extra zinc, or by using a chelating agent, EDTA, which altered the sequestering action of soybean oil meal. This was followed soon after by a report from Dr. R. M. Forbes of the Illinois station that swine developed parakeratosis when fed a diet of soybean oil meal containing low zinc, but that when pigs were fed casein as a source of protein they did not develop parakeratosis even at lower levels of zinc in the diet.

"Work in California has shown that the nitrogenous compounds of fish meal may form chelating agents and, depending upon the degree of heat, may render most, if not all, of the trace mineral elements in fish meal poorly available for poultry.

"During the past few months a report has come from the Clemson station in which the investigators have shown sesame meal is an even more serious chelator of zinc than is soybean oil meal. In fact, they were able to demonstrate that when sesame meal was included in the ration of poultry, addition of as much as 65 ppm of zinc did not always overcome all of the evidences of a zinc deficiency problem.

"Naturally these results with zinc and our own results with copper strongly suggest that the pattern of protein and protein compounds present in the diet, whether these are in the grain and concentrate supplements, or whether they are present in the pasture, may very sharply influence the utilization of trace elements by our ruminant animals. There is additional evidence that these compounds have a marked influence upon the performance of monogastric species when the level of trace elements is marginal in the diet."

Poultry Diets

The interrelationship between minerals has become of primary importance in the field of minerals in poultry diets, according to Dr. M. W. Pasvogel, vice president and director of research and nutrition, poultry division, Peter Hand Foundation, Chicago.

Dr. Pasvogel said that the minimum requirements for the 13 minerals which have demonstrable functions can be established only when all other dietary factors are at an optimum. He commented, "The relationship between calcium and phosphorus, calcium and zinc, calcium and manganese, molybdenum and sulphur, phosphorus and fluorine, iron and copper are examples of factors which must be considered in determining the chicks' or hens' requirements for mineral elements."

He further stated that just as important as the relationship between the mineral elements themselves and other dietary components is the form in which the mineral element is supplied to the chick or hen. Most trace mineral manufacturers, however, have not given an overall preference to certain compounds but will include a combination of salts designed to promote maximum performance and efficiency when included in the diet, he added.

In recent months calcium and phos-

Chicks Placed in Principal Broiler Areas

(000's omitted)

Week ending	Maine	Conn.	Penn.	Ind.	Ill.	Mo.	Del.	Md.
September 17	676	364	600	588	77	603	1,572	1,973
September 24	1,008	473	695	610	120	650	1,442	1,894
October 1	1,068	433	529	581	102	615	1,552	1,903
October 8	1,037	358	778	589	48	643	1,429	1,538
October 15	908	508	698	520	40	518	1,596	1,762
October 22	993	362	595	643	78	602	1,312	1,590
October 29	1,016	399	678	418	78	568	1,447	1,797
November 5	1,053	351	687	654	100	535	1,480	1,801
November 12	1,022	427	808	689	93	551	1,372	1,876
November 19	1,024	394	783	719	111	622	1,514	1,762

Week ending	Va.	W. Va.	N.C.	S.C.	Ga.	Fla.	Ala.	Miss.
September 17	790	363	2,717	297	6,139	185	3,115	2,009
September 24	778	313	2,645	276	5,961	200	3,107	1,944
October 1	678	423	2,844	303	5,946	202	3,085	1,880
October 8	809	326	2,873	326	5,694	202	3,084	1,884
October 15	713	356	2,809	317	5,750	198	3,099	2,027
October 22	684	385	2,746	302	5,624	228	3,053	2,057
October 29	714	353	2,820	308	5,627	205	3,156	2,094
November 5	767	400	2,890	284	5,923	178	3,132	2,179
November 12	867	327	2,876	319	5,968	210	3,110	2,196
November 19	928	294	2,993	339	5,974	186	3,133	2,198

Week ending	Ark.	La.	Texas	Wash.	Oregon	Calif.	Total 22 areas 1960	1959
September 17	3,073	334	1,616	278	188	920	28,477	24,682
September 24	2,905	325	1,658	242	237	1,006	28,489	24,573
October 1	2,825	356	1,623	216	181	1,109	28,454	24,612
October 8	2,865	346	1,615	256	208	1,033	28,261	24,674
October 15	2,884	319	1,635	218	214	1,024	28,103	23,755
October 22	3,022	337	1,608	263	137	892	27,903	24,066
October 29	2,998	341	1,660	182	158	1,051	28,068	25,712
November 5	3,222	345	1,642	262	126	1,036	29,534	26,271
November 12	3,375	371	1,739	280	194	1,117	29,787	26,884
November 19	3,328	385	1,760	290	210	1,114	30,061	27,133

phorus levels in the diets of broilers, laying hens and turkeys have been studied and revised recommendations have been published. The N.R.C. has recommended a level of 2.25% calcium in the diet of the laying hen. This level is adequate and will maintain both the hen and egg production under the conditions for which it was intended, the researcher said. However, with the advent of high energy rations for layers and the subsequent lowering of the pounds of feed required to produce a dozen eggs, this level will not produce thick shells, due principally to reduced calcium intake. Peterson and co-workers have established that egg shell quality is improved with a level of 3.75% dietary calcium for laying hens during periods of both elevated and lowered temperatures, Dr. Pasvogel commented.

He also pointed out that the "current recommended dietary calcium level for broilers is 1.0%. Stephenson and co-workers have established that levels of 0.6% calcium and 0.6% phosphorus resulted in optimum gains, feed efficiency and toe ash. It is their opinion that the 1.0% calcium is in excess of the chick's need and the composition of broiler rations should be re-evaluated. Reduced calcium intake will increase the blood antibiotic level. Low calcium, high antibiotic diets are presently used to prevent disease and also to treat broilers during a disease outbreak. The greatest impact of these potentiated diets has probably been the reduction of condemnations in the dressing plant."

Production Costs

Departing from the subject of nutrition, the conference dealt with cost of production of eggs, with Clifford Alston, Florida extension service, urging poultry and egg producers to include all items of cost in the bookkeeping system. Too many producers, for example, do not include all labor as costs, especially in large-family operations. This is a bookkeeping error that is leading many operators to appear to be making more money than they actually are, he said.

Considerable research has been conducted in Florida on the use of bagasse in cattle fattening rations, especially with sugar cane pulp, since the state produces a fair crop each year. The experiments extended to pellets with three types prepared for experimental purposes by the Jackson Grain Co., Tampa. One type consisted of 39% bagasse put through a 5/16 inch screen, 10% molasses, 1% mineral plus different amounts of cottonseed meal, urea, citrus pulp and corn meal. The pellets contained 11% digestible protein and from 51 to 54% TDN. Two types used citrus molasses in addition and the other a mixture of two parts molasses and one part ethyl alcohol. There was considerable refusal of the two lots while the one with 1 lb. alcohol met with no refusal.

Dr. W. G. Kirk, vice director in charge of the Range Cattle Experiment Station, Ona, Fla., was to have appeared on the program to discuss the subject of bagasse but illness prevented. Dr. Davis substituted.

Sugar Cane Pith

He reported more success had been attained by using the pith, or center of the sugar cane plant, than with the outside. This was because there seemed to be more absorption of molasses due to the physical structure.

Sugar cane bagasse can be used as a source of roughage in balanced rations for fattening cattle. However, cattle given finely ground bagasse as the only source of roughage developed bloat which was corrected by feeding 2 lb. of pangolagrass hay, he said.

Additives

With the degree of regulatory control surrounding established feed additives there can be little question of their safety, both to livestock and to consumers. But barriers to new additives appear too complex and formidable to encourage research in this important field, said Dr. D. V. Frost, head of the nutrition research department, Abbott Laboratories, who spoke on the subject of whether there is significance for human health in tissue residue from feed additives.

"Under the new law, particularly the clause which assumes danger of acquiring cancer through foods, it is easy to exaggerate any uncertainty. There is no absolute safety of any food. Preoccupation with absolute safety is an emotional problem. To make the new law work, its administrators, the Food and Drug Administration, must recognize the relativity of safety for what it is. In turn, drug and chemical manufacturers must recognize the relativity of safety for what it is. Drug and chemical manufacturers and the food and feed industries are willing and anxious to comply with reasonable laws and regulations.

"Precepts based on supposition appear to account for most of the fits and foibles about food throughout world history. Though not subject to major cultural and religious taboos, we are clearly susceptible to the machinations of minority groups who play on fear of the unknown. Public policy can be frozen into inflexible and unwise law, leading to confusion confounded.

"There is an obvious difference in spray residue on plant crops and residues in animals. No one has demonstrated, for instance, that food animals are capable of harboring enough of any approved feed additive to adversely affect human consumers in any way. Feed additives do good in terms of health or performance, else they would not be used. Excessive storage of vitamin A, as in polar bear livers, is a rare instance in which one animal's tissue can clearly poison another animal. The toxic fat factor has also been reported transmissible through the tissue of one animal to its consumer in demonstrably toxic amount. But transfer through animal tissue used as food has not been reported even for potent carcinogens. This basically emotional supposition is easily made, however, by those who zealously impugn feed additives per se."

Amino Acids

Interest in the Florida area toward determining the amino acid requirements for pigs of various ages, the establishment of calorie-protein ratios needed for optimum performance and the use of purified amino acids as protein supplements to practical rations were reported by Dr. George E. Combs, assistant animal husbandman.

Recent Florida data showed that supplementary lysine added at levels of 0.1, 0.2 and 0.4 to corn-cottonseed meal rations increased the daily gains of pigs from 0.31 lb. with no added lysine to 0.46, 0.60 and 0.66 lb.

"Continued research in this area will certainly permit the future formulation of low protein rations that are adequately balanced in amino acid content," he said.

Pullet Diets

With disagreement prevalent among poultrymen and feed men as to the efficiency of full feeding, limited feeding and the use of self-restricted feeds, Dr. Robert H. Harms, associate poultryman, experiment station, Gainesville, revealed details of a test being conducted there. Commercial egg production type birds were used and grown in complete confinement. During the first eight weeks they were fed on a starter diet containing 21% protein and 945 calories of productive energy per pound of feed.

At the ninth week they were placed on grower diets ranging from 700-1,180 calories of productive energy per pound and the protein content ranged from 9 to 25%. Pullets were housed in individual cages at 21 weeks and placed on a uniform laying feed treatment, varying in protein and energy content.

One of the important developments from the tests was the use of low-protein-containing feed for delaying sexual maturity. Total egg production or size at any given calendar date was not affected.

Dairy Feeding

Dairymen need to go further than trusting to breed in maintaining solids-not-fat in milk, the veteran Dr. R. B. Becker reported in pointing to investigations at Gainesville and other places. Feeding too small amounts of long leafy forages, pasture, silages and/or quality hays can cut production. Tests have led to the recommendation of more liberal feeding, along with quality forages, from which cows could derive productive energy. Further tests are underway now in Florida with the animals being placed under controlled feeding with 3 lb. of corn silage per 100 lb. live weight.

Concentrate Ratio

The ratio of concentrates fed to milkers in Florida is higher than any other state in the country, according to Dr. C. J. Wilcox, assistant professor of dairy husbandry.

"Although our dairymen are well aware of the traditional recommendations of 'feed as much high quality forage as possible' many are ignoring the recommendation with apparent success. These dairymen feed a minimum of forage, considerable concentrates and additional bulky concentrates (or roughage mixture). They avoid the heavy investments in the land, labor and machinery for a large-scale forage program. Many have cut forage consumption so drastically that they have been confronted with the problem of low fat content of milk. Research at Florida and other stations has shown that lack of hay and silage results in low fat content. At the other extreme, we have dairymen who put up huge quantities of silage each year and as much hay as the weather will allow. They are operating at a profit and many are enthusiastic about their particular program," he said.

Coccidiostats

Dr. David F. Green, executive director, Animal Science Research, Merck, Sharp and Dohme, Rahway, N.J., spoke on coccidiostats. He said, "Coccidiostats appear in the blood and tissue of birds when these drugs are used in poultry feeds. The drug industry executes appropriate studies to determine the extent of absorption and the rate of elimination so that the products may be properly labeled. Most coccidiostats must be removed from the feed from 3-5 days before broilers are marketed in order to permit the elimination of the drug from the edible tissue." He then presented some of the studies of Dr. W. H. Ott and associates, Merck Institute for Therapeutic Research.

Forage Consumption

Consumption rates of very succulent forages appeared to have increased somewhat when small amounts of concentrate feeds were included, according to Dr. J. M. Wing, assistant dairy husbandman, Florida Agricultural Experiment Station, Gainesville. In his talk entitled "Nutrient Intake of Cattle from Various Forage Sources," Dr. Wing commented, however, that small additions of concentrate feeds had no detectible influence on the digestibility of the forages.

FEED MEN ELECT—The new officers of the Florida Feed Dealers Assn. are shown with Doyle Connors, commissioner of agriculture, center. From the left, those pictured are: William D. C. Robinson, Security Feed, Jacksonville, treasurer; Roger Eikenberry, General Mills, Coral Gables, vice president; Mr. Connors; James Barnhardt, Early & Daniel, Tampa, secretary, and Russ Godwin, Florida Feed, Jacksonville, president.

MARKETS

(Continued from page 2)

Hogs hit a new top at Chicago this week at $19 and last week's corn-hog feeding ratio was materially higher at 18.9 vs. 17.7 a week ago and 11.3 a year ago.

South Central

Formula feed business is reported to be fairly good this week even though total shipments will slump because of the holiday interruption. Very few hours of overtime have been used despite the loss of one day's production. Most plants are operating just four days with single shifts.

Pig and hog feeds again provide the bulk of the sales with heavy feeding being stimulated by an abundance of non-storable corn, comparatively low cost concentrates and highly favorable returns. Other lines, including cattle and egg rations, also continue to move in good amounts.

Feed men are of the opinion that business will be tilting upward shortly. They base this on the belief that excess usage of damp grain has been a limiting factor in sales and after the overflow gets out of the way feeders will be inclined to use more formula feeds.

Ohio Valley

As formula feed dealers and their families settled down this week to enjoy their annual feasting on turkey, pumpkin pie and the many other bounties made available by a plentiful harvest, their thoughts could indeed turn thankfully to many blessings. Certainly, these far outweigh in importance the many problems that may be confronting them, their communities and their nation.

One of the blessings for Ohio Valley feed manufacturers and retailers has been a summer of plentiful rainfall that served to create the bounteous crops so recently harvested. Then there has been the tremendous valley upsurge in manufacturing activities that is continuing to attract many thousands of families with resultant benefit to all businesses in any way involved in supplying their food. And most importantly, is the fact that every feed manufacturer plays a vital role in providing this human and animal food.

While it is true that the business of feed manufacurers in this area has been somewhat below expectations during recent months, the outlook is brightening steadily, and there is every expectation that the business volume will increase further during the few remaining weeks of this year. Naturally, every segment of the feed industry hereabouts is hoping for sharp and sustained dropping of temperatures as a means of insuring this business upswing.

Pacific Northwest

Dairymen and cattle feeders throughout Oregon, Washington and Idaho this week were reportedly inquiring for increased amounts of feed as the reflection of seasonally colder weather which brought heavy rains along with snow covering in some interior districts.

Formula feed sales throughout the region were considered to average fairly good considering the month's heavy turkey slaughter which in turn was indicated by a smaller movement of poultry feeds.

Pacific Northwest feedstuffs quotes developed an easier trend during the past period under the influence of generally ample offerings and a limited demand from mixers. Trade sources indicated that manufacturers and feeders were just purchasing supplies for nearby needs and appeared inclined to restrict buying until more settled market conditions rule.

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CROTALARIA

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crop, the federal government should help eliminate it.

A representative of the Food & Drug Administration attended the two meetings of the committee during the conference and said the department had no information on tolerances and, furthermore, knows nothing about the plant.

Also recommended was the compartmentalizing of corn to avoid widespread contamination, and that probes be made into the compartments. It was further recommended that when samples are taken they be on gallon portions.

The committee's recommendations will be presented to the state commissioner of agriculture who originally asked for the investigation.

The action of the Florida committee is one of the first concerted efforts to ascertain control methods in the South since crotalaria became a problem in corn. Not in recent years has a subject been as hotly discussed in the corn business in Dixie.

This fall the seed has been more prevalent than in recent years, especially in the lower Deep South. Some plants are reported cleaning corn twice in an effort to get rid of it. This has resulted in increased costs and with shrinkage said to be running from 3-7%.

With some buyers reported demanding a guarantee of zero tolerance, Russell Henderson, a member of the committee, said, "This is a real problem. It affects the grainman, the producer, the feed mills and the brokers, as well as the railroad people and others. The corn crop in Florida amounts to $1½ million. The corn users and the growers have to be protected."

Decline Continues in Oilseed Meal Futures

MEMPHIS, TENN.—Reflecting only light demand for the cash article, oilseed meal futures moved considerably lower the past week on the Memphis Board of Trade. The week was marked by levels equal to post World War II lows in soybean oil meal on the cash market.

Lack of strength in soybean oil meal was attributed in part to the large processor crush and reduced demand for meals to move into export. Cash buyers continued trading for nearby positions, which showed unusually large discounts in relation to forward cash price offerings.

Until tightness of supplies develops, buyers are expected to trade on the immediate market.

The cottonseed oil meal board was quiet, with the trend lower.

Mixed feed demand was reportedly good, with the trade predicting even better business when colder weather arrives.

Unrestricted soybean oil meal closed Nov. 22 $1.50-$3.50 ton lower than on Nov. 15; Eastern Trunk Line soybean oil meal was $1.50-$2 lower and bulk solvent cottonseed oil meal was $1-$1.25 lower.

Trading for the period amounted to 4,800 tons of unrestricted soybean oil meal and 500 tons of bulk solvent cottonseed oil meal.

Seek $450,000 to Buy Poultry Plant

DARDANELLE, ARK.—The Dardanelle city council has set Dec. 28 as the date for two bond issues totaling $450,000 to be used for purchase of a large poultry processing building here.

The money would be used to purchase the building housing Fox DeLuxe Foods, Janet Davis Kitchens and Dardanelle Cold Storage.

The building will then be leased to Arkansas Valley Industries, Inc., Dardanelle, large poultry and feed concern.

AVI has agreed to take a 20-year lease on the building.

TO RETURN TO POST

MINNEAPOLIS—Marie Meyer, office manager for Cereal By-Products Co., Minneapolis, is expected to return to her post soon following an illness of more than a month.

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